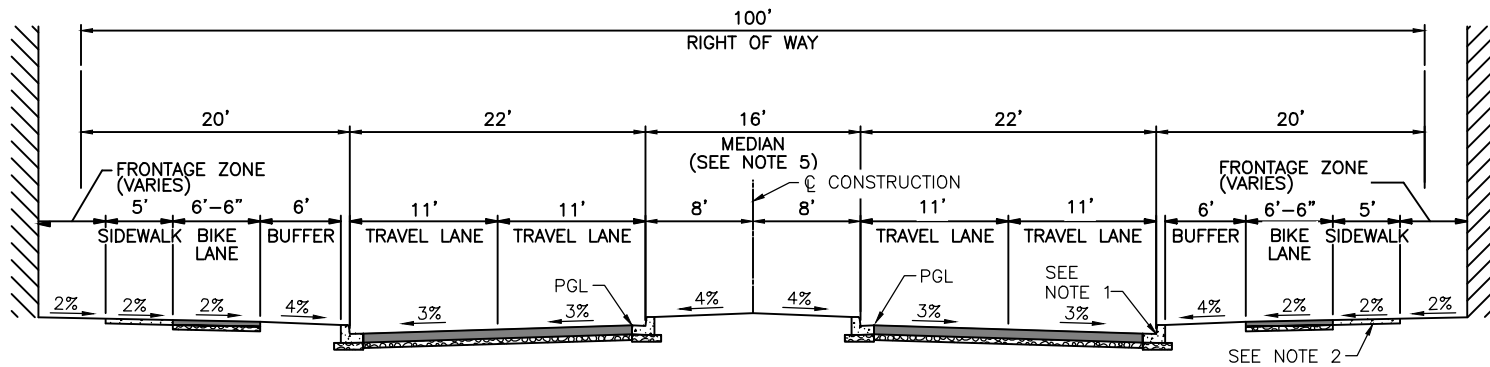


BOULEVARD WITH PARKING



BOULEVARD NO PARKING

NOTES:

1. 7" COMBINATION CURB AND GUTTER.
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
4. USE PAVING SECTION P-6.
5. PROVIDE 11'-0" LEFT TURN LANE AS REQUIRED.

Revised

Revised

X/X/XXXX  
Approved

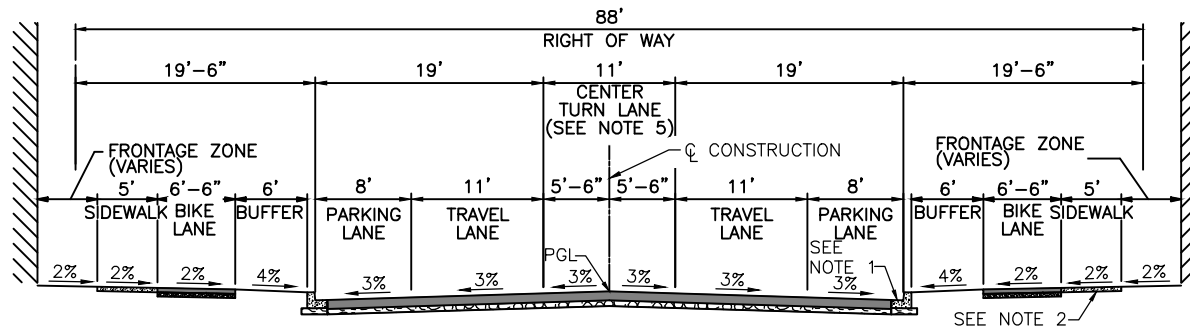
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

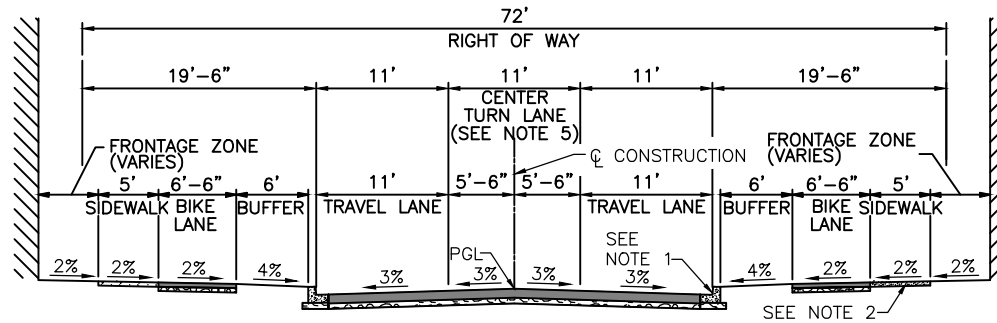
TYPICAL SECTIONS  
Boulevard

Detail

R-1.01



TOWN CENTER CONNECTOR WITH PARKING



TOWN CENTER CONNECTOR NO PARKING

**NOTES:**

1. 7" COMBINATION CURB AND GUTTER.
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
4. USE PAVING SECTION P-5.
5. MEDIAN MAY BE PROVIDED WHERE TURN LANE IS NOT NEEDED.

Revised

Revised

X/X/XXXX  
Approved

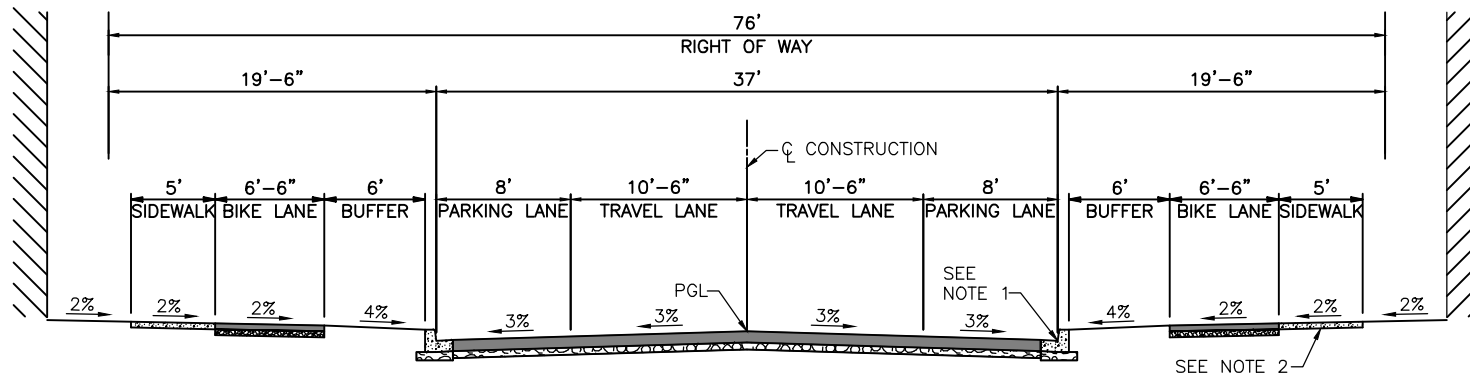
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

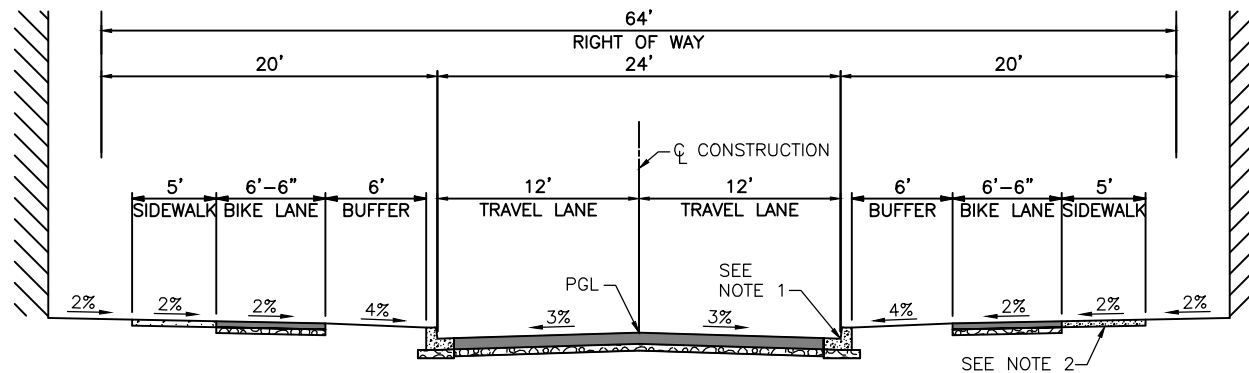
TYPICAL SECTIONS  
Town Center Connector

Detail

R-1.02



TOWN CENTER STREET WITH PARKING



TOWN CENTER STREET NO PARKING

NOTES:

1. TYPE OF CURB VARIES (MODIFIED COMBINATION CURB & GUTTER OR COMBINATION CURB & GUTTER - SEE DESIGN MANUAL VOLUME III).
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
4. USE PAVING SECTION P-3.

Revised

Revised

X/X/XXXX  
Approved

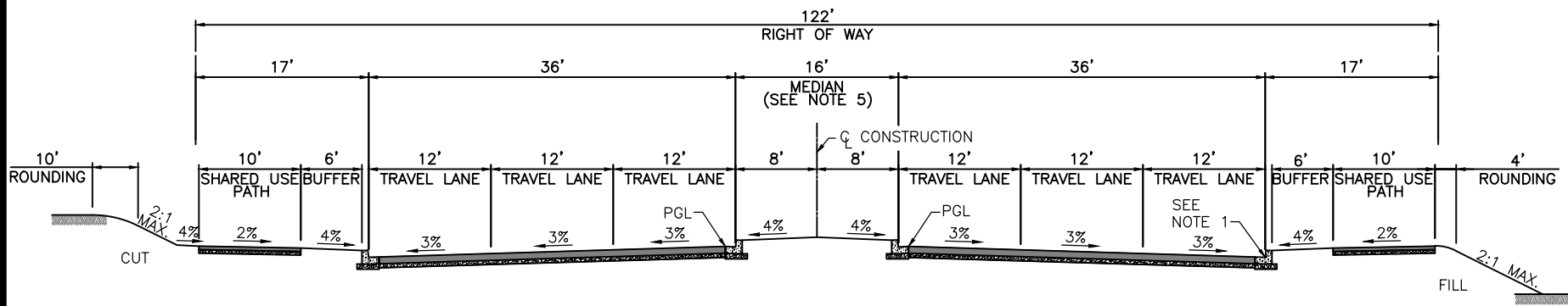
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

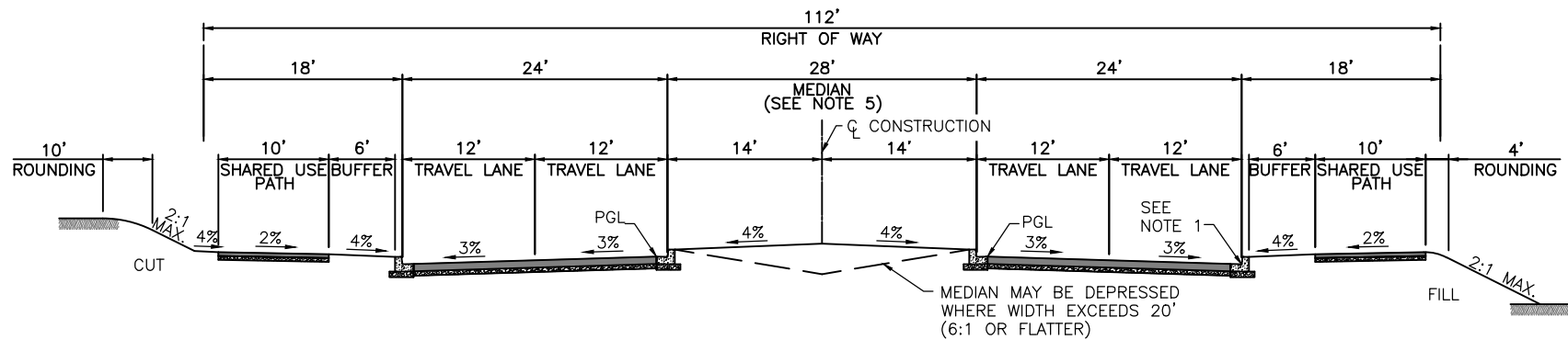
TYPICAL SECTIONS  
Town Center Street

Detail

R-1.03



PARKWAY (6 LANES)



PARKWAY (4 LANES)

### NOTES:

1. 7" COMBINATION CURB AND GUTTER.
2. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
3. USE PAVING SECTION P-6.
4. NORMAL CROWN SECTIONS ARE SHOWN, SEE DESIGN MANUAL VOLUME III FOR SUPERELEVATION REQUIREMENTS.
5. PROVIDE ONE OR TWO 11'-0" LEFT TURN LANES AS REQUIRED.

Revised

Revised

X/X/XXXX  
Approved

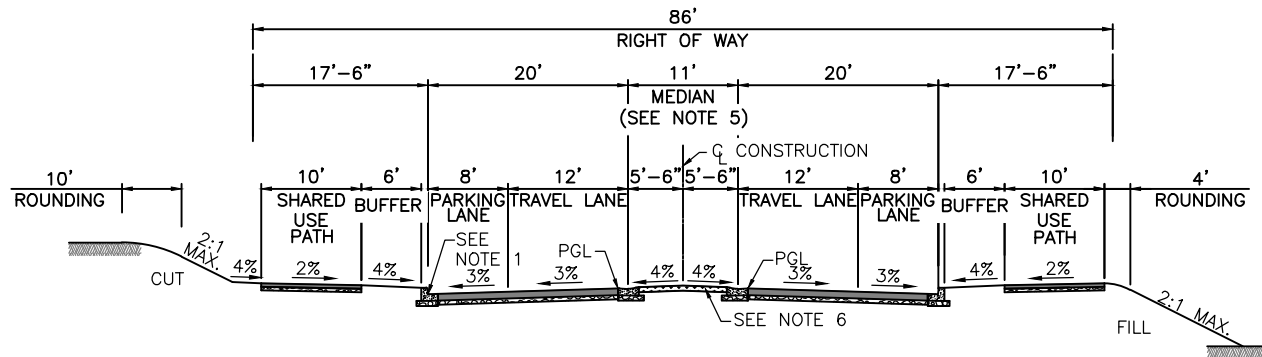
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

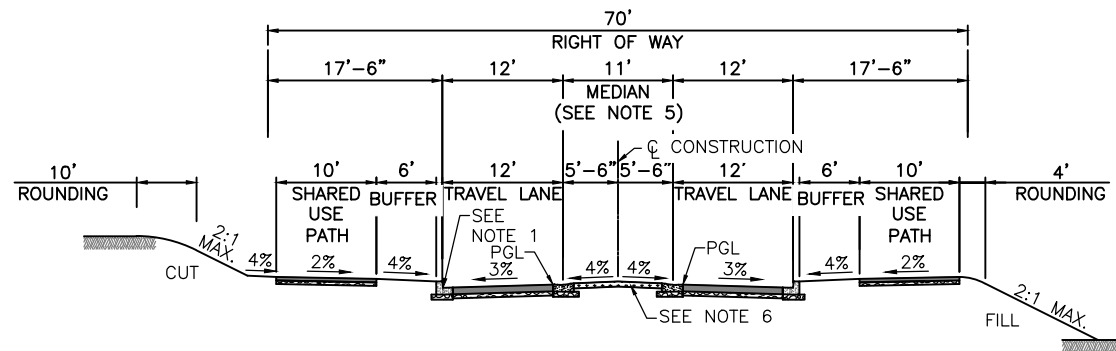
TYPICAL SECTIONS  
Parkway

Detail

R-1.04



NEIGHBORHOOD CONNECTOR WITH PARKING



NEIGHBORHOOD CONNECTOR NO PARKING

### NOTES:

1. TYPE OF CURB VARIES (MODIFIED COMBINATION CURB & GUTTER OR COMBINATION CURB & GUTTER - SEE DESIGN MANUAL VOLUME III). MEDIAN CURB SHALL BE MODIFIED COMBINATION CURB & GUTTER.
2. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
3. USE PAVING SECTION P-5.
4. NORMAL CROWN SECTIONS ARE SHOWN. SEE DESIGN MANUAL VOLUME III FOR SUPERELEVATION REQUIREMENTS.
5. PROVIDE 11'-0" LEFT TURN LANE AS REQUIRED.
6. MEDIAN MUST BE STABILIZED FOR VEHICLE LOADING AND REMAIN PERVIOUS TO THE MAXIMUM EXTENT POSSIBLE.

Revised

Revised

X/X/XXXX  
Approved

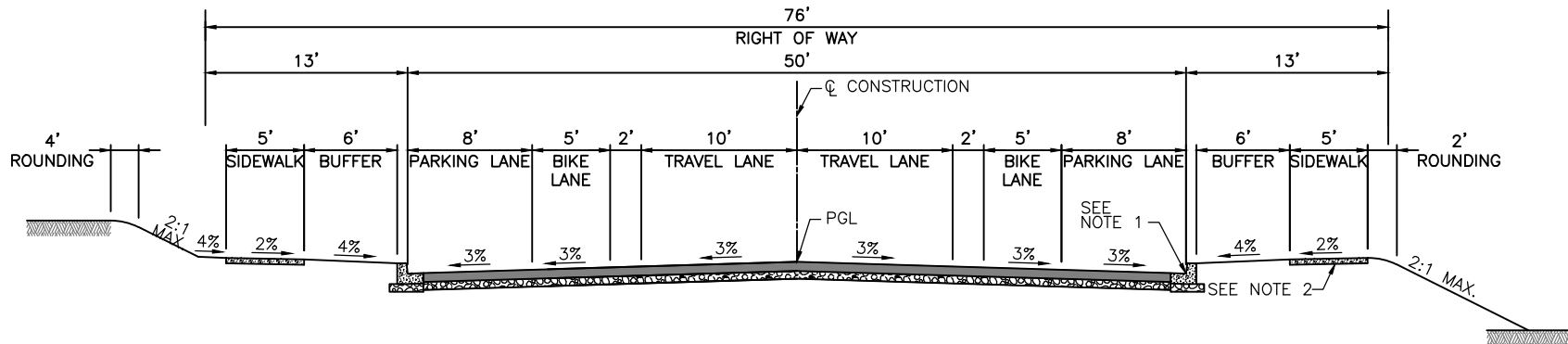
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

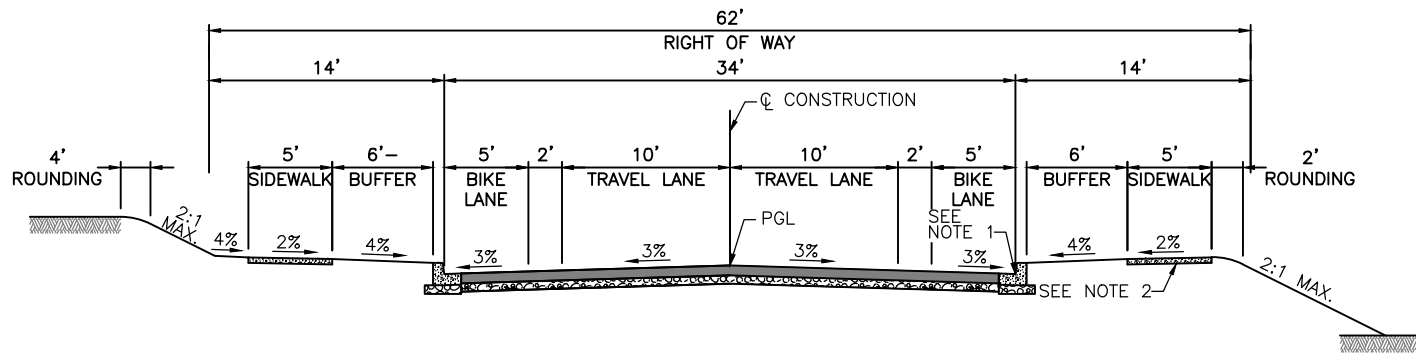
TYPICAL SECTIONS  
Neighborhood Connector

Detail

R-1.05



NEIGHBORHOOD STREET 1 WITH PARKING



NEIGHBORHOOD STREET 1 NO PARKING

NOTES:

1. TYPE OF CURB VARIES (MODIFIED COMBINATION CURB & GUTTER OR COMBINATION CURB & GUTTER - SEE DESIGN MANUAL VOLUME III).
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
4. USE PAVING SECTION P-4.

Revised

Revised

X/X/XXXX

Approved

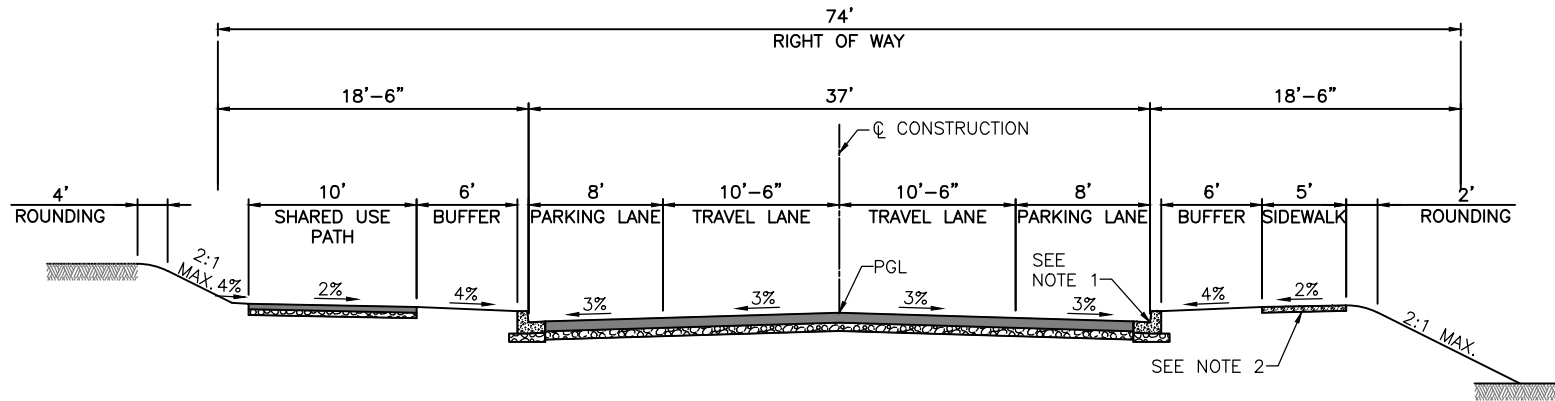
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

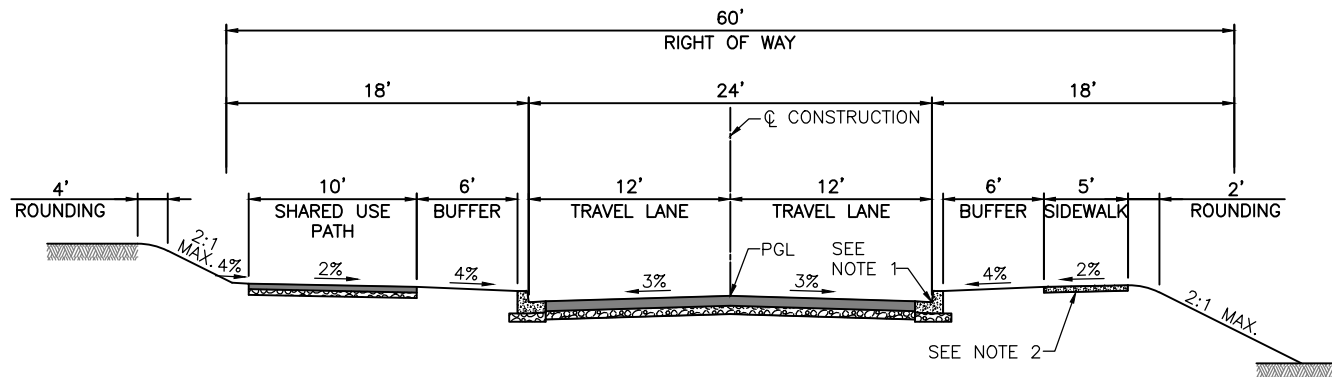
TYPICAL SECTIONS  
Neighborhood Street 1

Detail

R-1.06



NEIGHBORHOOD STREET 2 WITH PARKING



NEIGHBORHOOD STREET 2 NO PARKING

NOTES:

1. TYPE OF CURB VARIES (MODIFIED COMBINATION CURB & GUTTER OR COMBINATION CURB & GUTTER - SEE DESIGN MANUAL VOLUME III).
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
4. USE PAVING SECTION P-4.

Revised

Revised

X/X/XXXX

Approved

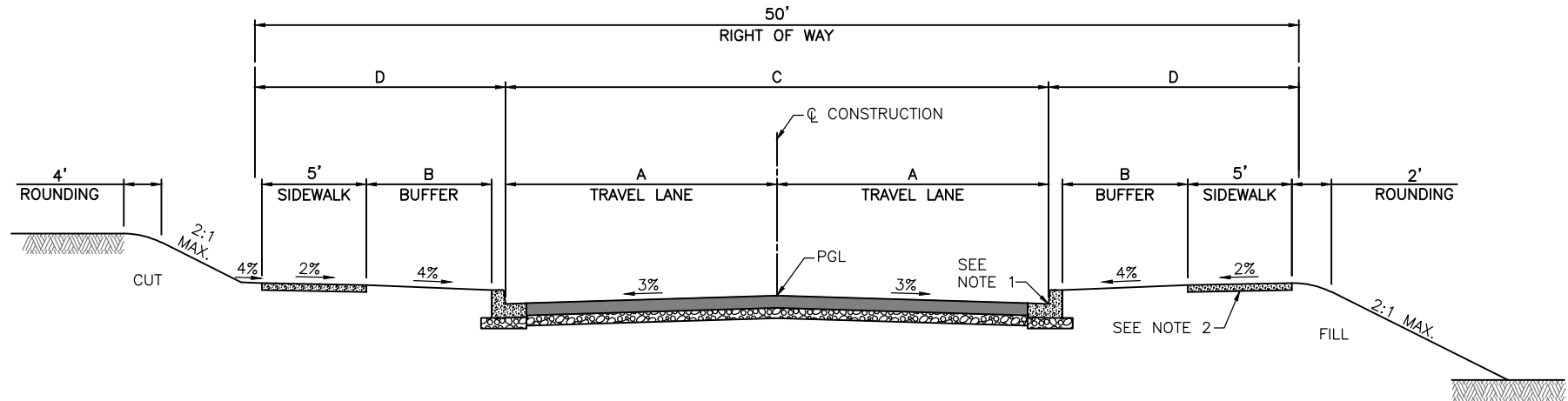
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

TYPICAL SECTIONS  
Neighborhood Street 2

Detail

R-1.07



# NEIGHBORHOOD YIELD STREET

HOUSING TYPE	AVERAGE DAILY TRAFFIC	A	B	C	D	PAVING SECTION
SINGLE FAMILY DETACHED	< 2,000 VEHICLES	12'	6'	24'	13'	P-2
SINGLE FAMILY DETACHED	≥ 2,000 VEHICLES	13'	6'	26'	12'	P-3
TOWNHOMES / APARTMENTS / MOBILE HOMES	< 1,000 VEHICLES	13'	6'	26'	12'	P-3
TOWNHOMES / APARTMENTS / MOBILE HOMES	≥ 1,000 VEHICLES	14'	5'	28'	11'	P-3

## NOTES:

1. TYPE OF CURB VARIES (MODIFIED COMBINATION CURB & GUTTER OR COMBINATION CURB & GUTTER - SEE DESIGN MANUAL VOLUME III).
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).

Revised

Revised

X/X/XXXX  
Approved

Howard County, Maryland  
Department of Public Works

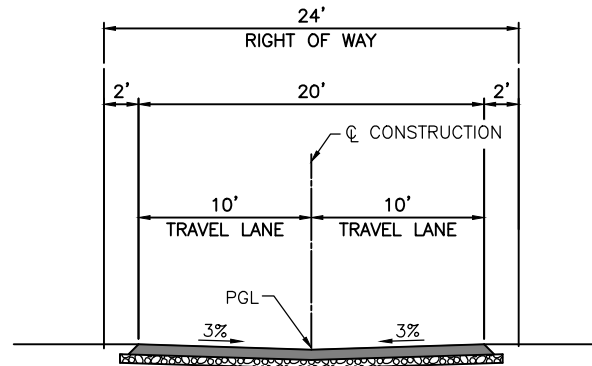
Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

TYPICAL SECTIONS  
Neighborhood Yield Street

Detail

R-1.08





ALLEY

NOTES:

1. USE PAVING SECTION P-2.

Revised

Revised

X/X/XXXX  
Approved

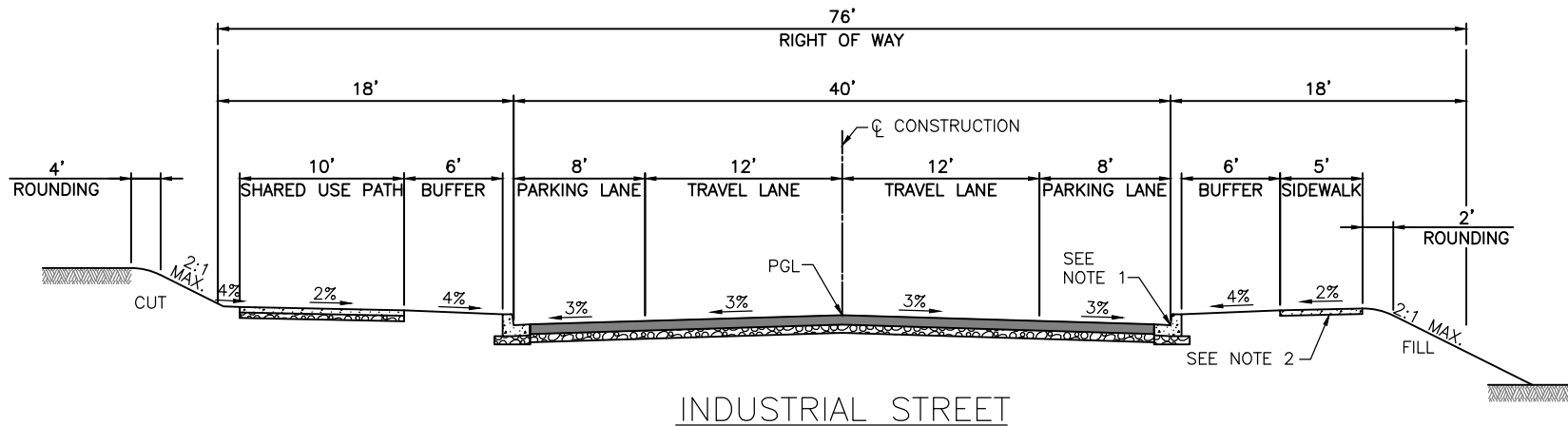
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

TYPICAL SECTIONS  
Alley

Detail

**R-1.09**



#### NOTES:

1. 7" COMBINATION CURB & GUTTER.
2. 4" CONCRETE SIDEWALK.
3. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
4. USE PAVING SECTION P-4.

Revised

Revised

X/X/XXXX

Approved

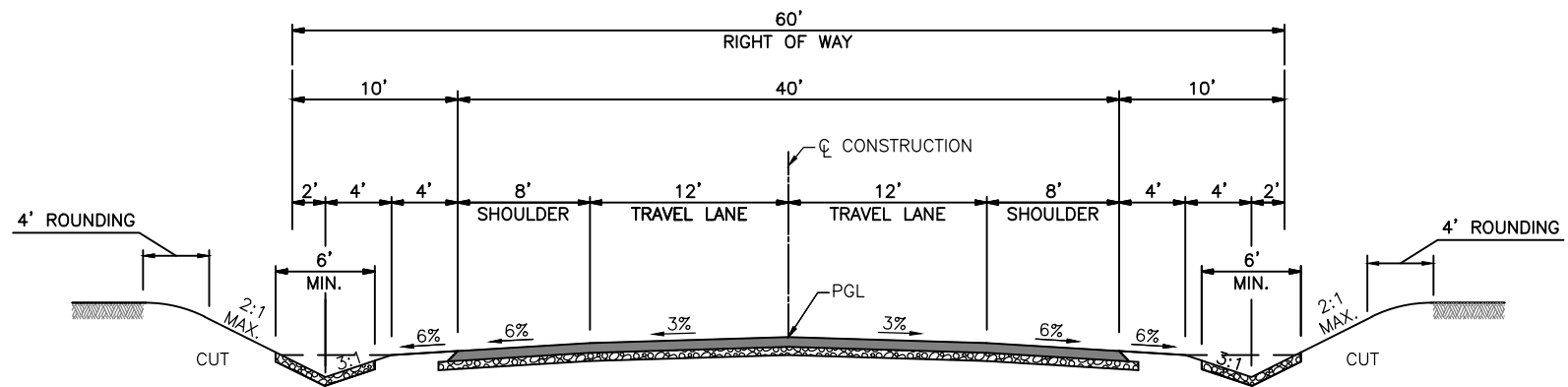
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

TYPICAL SECTIONS  
Industrial Street

Detail

R-1.10



## COUNTRY ROAD

### NOTES:

1. TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL VOLUME III).
2. DITCH CROSS SECTION SLOPE MAY BE FLATTENED TO PROVIDE A SWALE AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF SWALE FLOW IS SMALL, AS APPROVED BY DPW.
3. USE PAVING SECTION P-4.
4. NORMAL CROWN SECTIONS ARE SHOWN. SEE DESIGN MANUAL VOLUME III FOR SUPERELEVATION REQUIREMENTS.

Revised

Revised

X/X/XXXX  
Approved

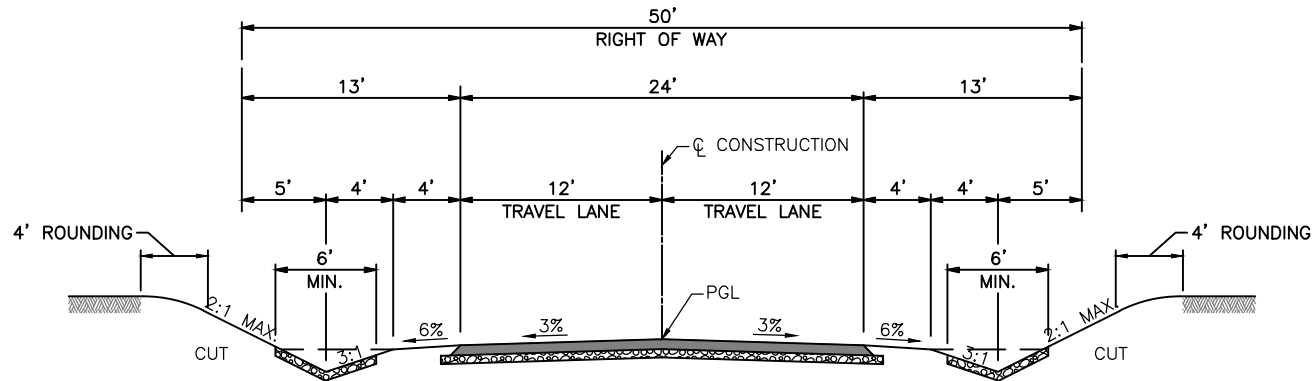
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

TYPICAL SECTIONS  
Country Road

Detail

R-1.11



## RURAL DEVELOPMENT STREET

### NOTES:

1. DITCH CROSS SECTION SLOPE MAY BE FLATTENED TO PROVIDE A SWALE AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF SWALE FLOW IS SMALL, AS APPROVED BY DPW.
2. USE PAVING SECTION P-3.

Revised

Revised

X/X/XXXX  
Approved

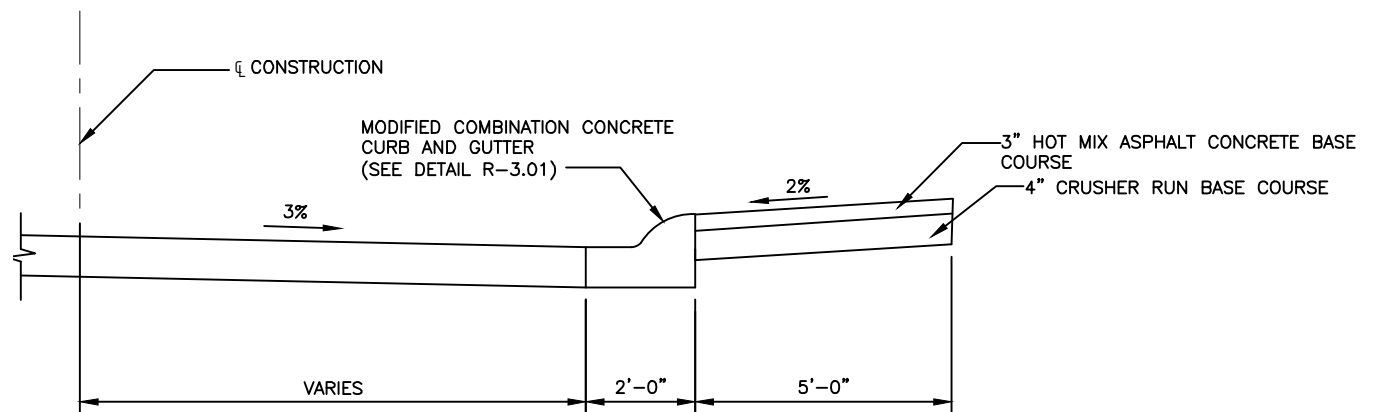
Howard County, Maryland  
Department of Public Works


Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

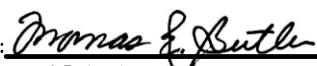
TYPICAL SECTIONS  
Rural Development Street

Detail


R-1.12

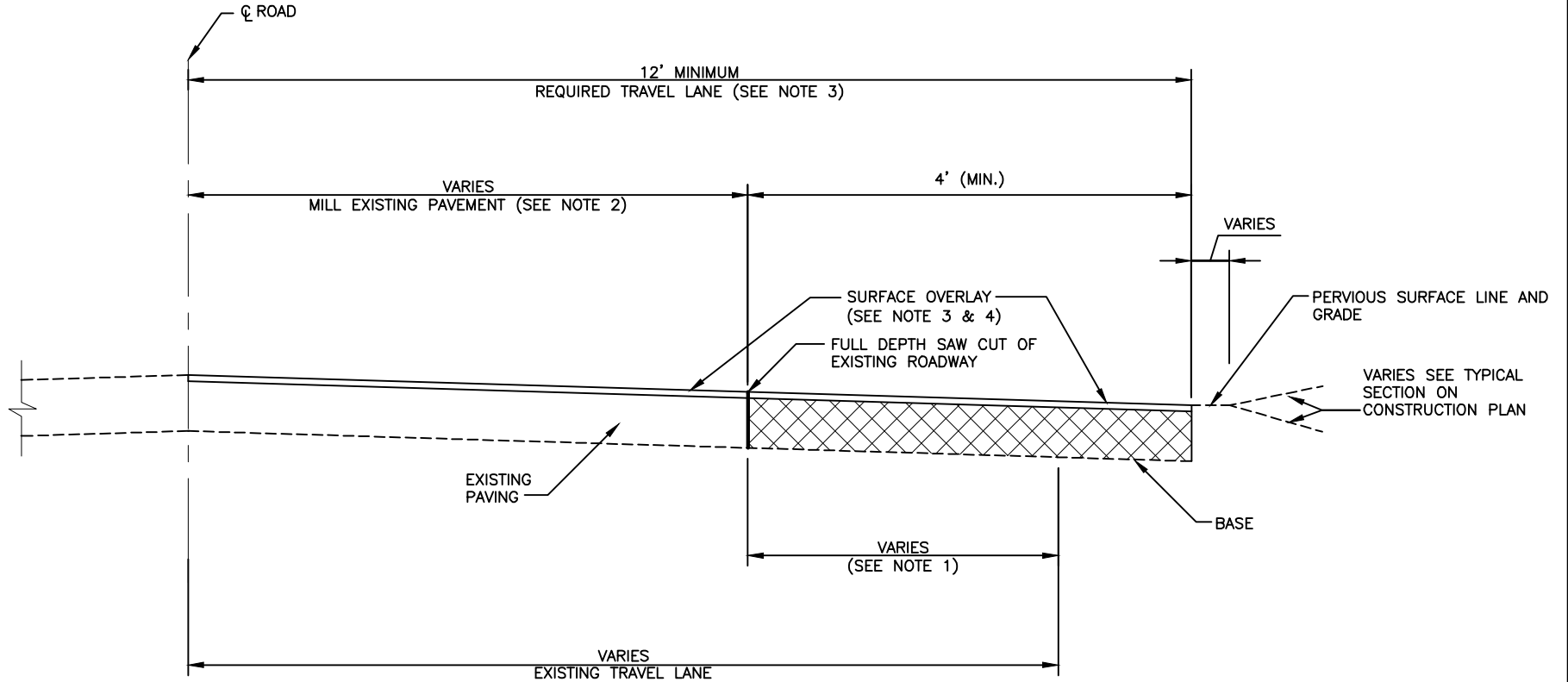


 Revised  
 5/30/2017  
 Approved  
 5/7/2007  
 Approved

Howard County, Maryland  
 Department of Public Works  
 Approved:   
 Chief, Bureau of Engineering

TYPICAL SECTIONS  
 Raised Shoulder

Detail  
 R-1.13



### NOTES:

1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4' OF WIDENING FROM FACE OF GUTTER PAN.
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).
3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.



Revised

5/30/2017

Approved

5/7/2007

Approved

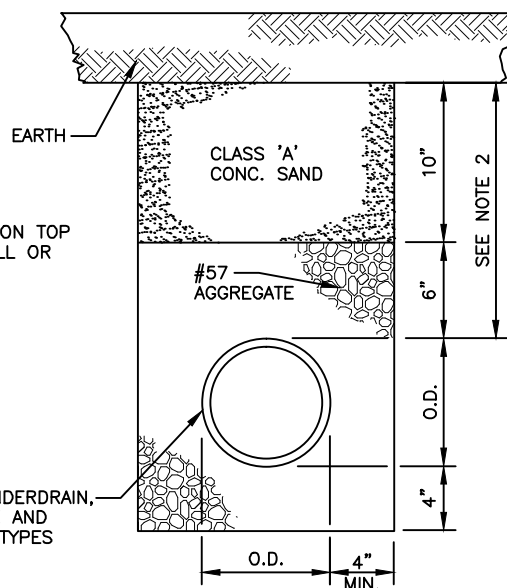
Howard County, Maryland  
Department of Public Works

Approved: *Thomas E. Butler*  
Chief, Bureau of Engineering

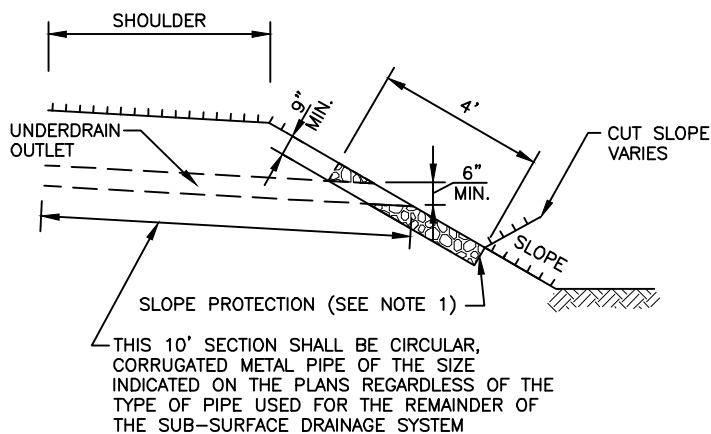
Existing Roadway  
Widening Strip

Detail

R-1.14



SUB-SURFACE UNDERDRAIN  
TRENCH SECTION



## UNDERDRAIN OUTLET ON ROADWAY SLOPE

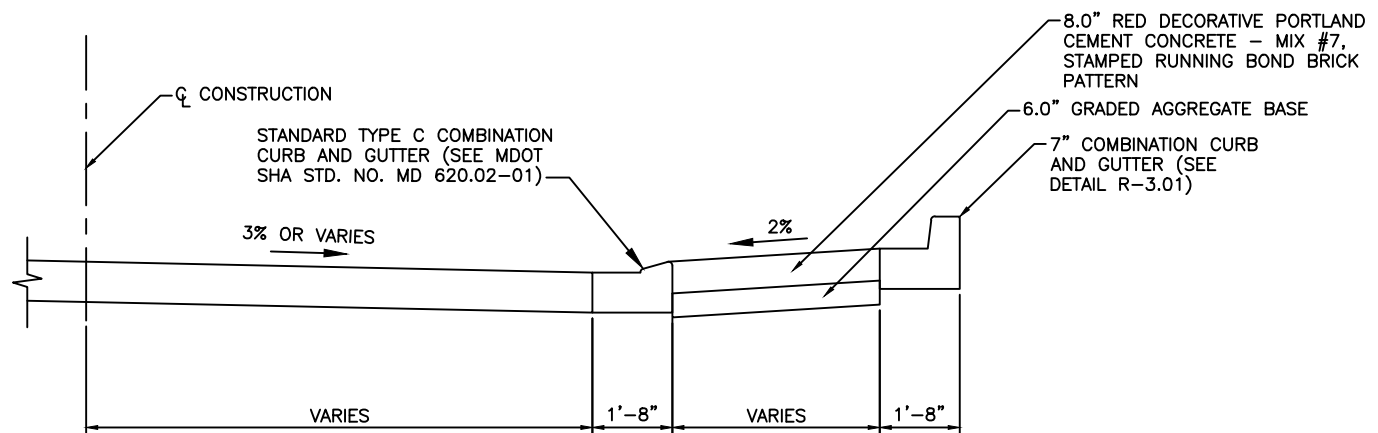


1. SLOPE PROTECTION USING 4" TO 7" STONE SHALL BE USED. THE WIDTH OF STONE PROTECTION TO BE 2'.
2. WITH THE APPROVAL OF THE ENGINEER, THE DIMENSIONS SHOWN MAY BE VARIED WHERE UNDERDRAIN DISCHARGED INTO AN INLET OR WHERE OTHER UNUSUAL CONDITIONS PREVAIL. SEE SPECIFICATIONS PERTAINING TO PAYMENT FOR EXTRA TRENCH DEPTH.
3. UNDERDRAIN SHALL BE LAID ON A MINIMUM 1.0% GRADE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. UNDERDRAINS SHALL BE DISCHARGED INTO INLETS AND MANHOLES WHERE POSSIBLE AND SHALL BE DISCHARGED ONTO THE ROADWAY SLOPES ONLY WHERE NO INLETS OR MANHOLES ARE AVAILABLE FOR CONNECTION.
5. FOR JOINTS, REFER TO SPECIFICATIONS.
6. WRAP #57 AGGREGATE WITH GEOTEXTILE FABRIC. SEE DETAIL IN THIS SHEET. GEOTEXTILE CLASS SHALL BE SPECIFIED IN PLANS.



Approved: Thomas E. Butler  
Chief, Bureau of Engineering

**△<sub>2</sub>R-1.15**



#### NOTES

1. FOR DISCUSSION OF APPROPRIATE APPLICATIONS FOR TRUCK APRONS, SEE VOLUME III OF THE DESIGN MANUAL.

Revised

Revised

X/X/XXXX  
Approved

Howard County, Maryland  
Department of Public Works









Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

TYPICAL SECTIONS  
Truck Apron Detail

Detail

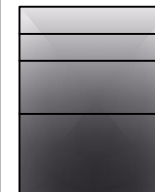
R-1.16



SECTION NUMBER	ROAD AND STREET CLASSIFICATION / TYPE		CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥ 7	3 TO <5	5 TO <7	≥ 7
	 NEW STREET TYPE	 RETROFIT PROJECTS ONLY	PAVEMENT MATERIAL (INCHES)	MIN. SUPERPAVE ASPHALT MIX WITH GAB			SUPERPAVE ASPHALT MIX WITH CONSTANT GAB		
P-1		PARKING BAYS: RESIDENTIAL AND NON-RESIDENTIAL PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	SUPERPAVE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
			SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE (NA)	NA	NA	NA	NA	NA	NA
			SUPERPAVE ASPHALT MIX BASE 19.0 MM, PG 64-22S, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	3.0	2.5
			GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0	4.0	4.0
P-2	ALLEY NEIGHBORHOOD YIELD STREET SINGLE FAMILY DETACHED ADT < 2,000 VEHICLES	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	SUPERPAVE ASPHALT MIX FINAL SURFACE 9.5 MM, PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
			SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE 9.5 MM, PG 64-22S, LEVEL 1 (ESAL)	1.0 	1.0 	1.0 	1.0 	1.0 	1.0 
			SUPERPAVE ASPHALT MIX BASE 19.0 MM, PG 64-22S, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
			GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	RURAL DEVELOPMENT STREET NEIGHBORHOOD YIELD STREET EXCEPT SINGLE FAMILY DETACHED ADT < 2,000 TOWN CENTER STREET	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: NON-RESIDENTIAL MINOR COLLECTORS: RESIDENTIAL	SUPERPAVE ASPHALT MIX FINAL SURFACE 9.5 MM, PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
			SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE 9.5 MM, PG 64-22S, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
			SUPERPAVE ASPHALT MIX BASE 19.0 MM, PG 64-22S, LEVEL 1 (ESAL)	3.0	3.0	3.0	4.5	3.0	2.0
			GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0
P-4	NEIGHBORHOOD STREET 1 NEIGHBORHOOD STREET 2 INDUSTRIAL STREET COUNTRY ROAD	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	SUPERPAVE ASPHALT MIX FINAL SURFACE 12.5 MM, PG 64-22S, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE 12.5 MM, PG 64-22S, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			SUPERPAVE ASPHALT MIX BASE 19.0 MM, PG 64-22S, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
			GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0


## NOTES

- HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARBAGE TRUCKS.
- SUPERPAVE ASPHALT MIX LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN. TO 4.0" MAX.), 12.5 MM SURFACE (1.5" MIN. TO 3.0" MAX.), AND 9.5 MM SURFACE (1.0" MIN. TO 2.0" MAX.)
- GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX. COMPACTED THICKNESS LAYERS.
- THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
- IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APRONS WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
- THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY.



SUPERPAVE ASPHALT MIX FINAL SURFACE  
 SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE  
 SUPERPAVE ASPHALT MIX BASE  
 GRADED AGGREGATE BASE (GAB)



Revised  
 6/17/2015  
 Revised  
 5/7/2007  
 Approved



Howard County, Maryland  
 Department of Public Works

Approved: W:\3767\Final Volume 4\signature.bmp  
 Chief, Bureau of Engineering

PAVING SECTIONS  
 P-1 to P-4

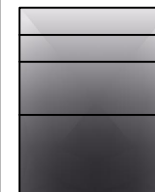
Detail

R-2.01

SECTION NUMBER	ROAD AND STREET CLASSIFICATION / TYPE		CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥ 7	3 TO <5	5 TO <7	≥ 7
	 NEW STREET TYPE	 RETROFIT PROJECTS ONLY	PAVEMENT MATERIAL (INCHES)	MIN. SUPERPAVE ASPHALT MIX WITH GAB			SUPERPAVE ASPHALT MIX WITH CONSTANT GAB		
P-5	NEIGHBORHOOD CONNECTOR TOWN CENTER CONNECTOR	MINOR ARTERIAL	SUPERPAVE ASPHALT MIX FINAL SURFACE 12.5 MM, PG 70-22, LEVEL 3 (HIGH ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE 12.5 MM, PG 64-22S, LEVEL 3 (HIGH ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			SUPERPAVE ASPHALT MIX BASE 19.0 MM, PG 64-22S, LEVEL 3 (HIGH ESAL)	6.0	6.0	6.0	7.0	5.0	4.0
			GRADED AGGREGATE BASE (GAB)	11.0	5.0	4.0	8.0	8.0	8.0
P-6	BOULEVARD PARKWAY	UNDIVIDED INTERMEDIATE ARTERIAL DIVIDED INTERMEDIATE ARTERIAL	SUPERPAVE ASPHALT MIX FINAL SURFACE 12.5 MM, PG 70-22S, LEVEL 3 (HIGH ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE 12.5 MM, PG 64-22S, LEVEL 3 (HIGH ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
			SUPERPAVE ASPHALT MIX BASE 19.0 MM, PG 64-22S, LEVEL 3 (HIGH ESAL)	7.0	7.0	7.0	8.5	6.5	5.0
			GRADED AGGREGATE BASE (GAB)	13.0	6.0	4.0	8.0	8.0	8.0
P-7		STABILIZED SHOULDER: MINOR ARTERIAL	CHIP SEAL DOUBLE SURFACE TREATMENT	1.75	1.75	1.75	NA	NA	NA
			GRADED AGGREGATE BASE (GAB)	16.5	14.5	13.0	NA	NA	NA
P-8		PAVED SHOULDER: UNDIVIDED INTERMEDIATE ARTERIAL DIVIDED INTERMEDIATE ARTERIAL SIDEWALK AND PARKING AREAS (PRIVATE) (NOTE: THIS SECTION MAY BE USED IN LIEU OF CONCRETE SIDEWALK IN OFF SITE, PRIVATELY MAINTAINED AREAS ONLY.)	SUPERPAVE ASPHALT MIX FINAL SURFACE 12.5 MM, PG 64-22S, LEVEL 1 (LOW ESAL)	3.0	3.0	3.0	4.0	3.5	3.5
			GRADED AGGREGATE BASE (GAB)	9.5	8.0	5.5	6.0	6.0	6.0

## NOTES

- HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARBAGE TRUCKS.
- SUPERPAVE ASPHALT MIX LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN. TO 4.0" MAX.), 12.5 MM SURFACE (1.5" MIN. TO 3.0" MAX.), AND 9.5 MM SURFACE (1.0" MIN. TO 2.0" MAX.)
- GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX. COMPACTED THICKNESS LAYERS.
- THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
- IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APRONS WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
- THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY.



SUPERPAVE ASPHALT MIX FINAL SURFACE  
 SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE  
 SUPERPAVE ASPHALT MIX BASE  
 GRADED AGGREGATE BASE (GAB)



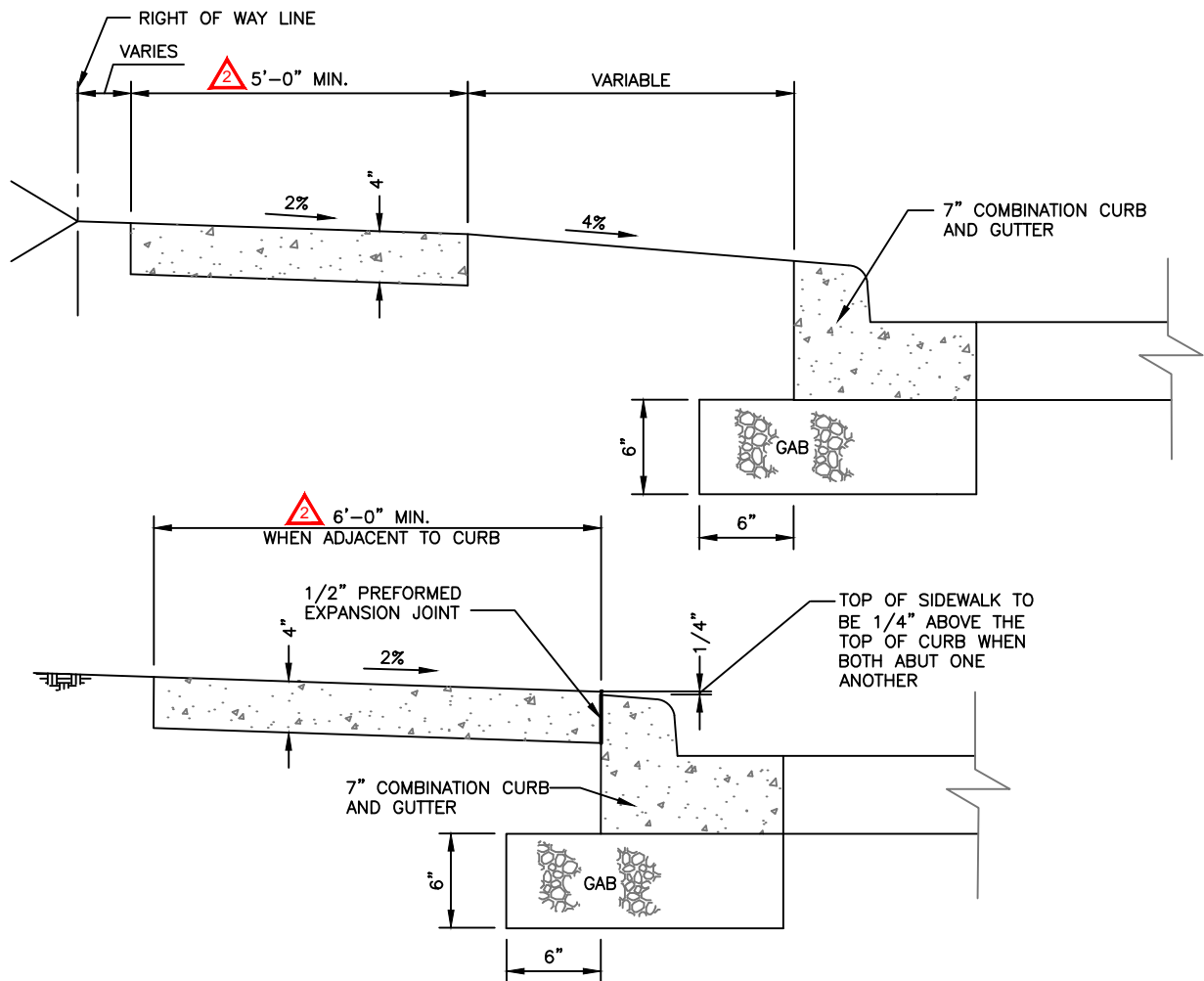
Revised  
6/17/2015  
Revised  
5/7/2007  
Approved

Howard County, Maryland  
Department of Public Works

Approved:                       
Chief, Bureau of Engineering

PAVING SECTIONS  
P-5 to P-8

Detail  
R-2.02



## NOTES:

1. SIDEWALK TO BE SCRIBED IN 5'-0" MAXIMUM SQUARES.
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART, OR 16' FOR 4' WIDE SIDEWALK.
3. 1/2" PREFORMED EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX #3.
5. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED EXPANSION JOINT BETWEEN SIDEWALK AND CURB.
6. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT THE EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.



Revised  
5/30/2017  
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5/7/2007  
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Chief, Bureau of Engineering

CONCRETE SIDEWALK

Detail

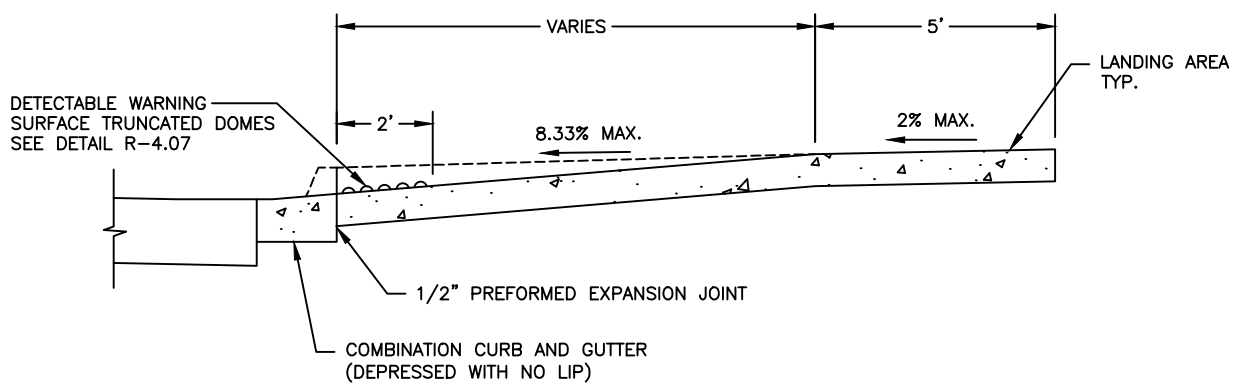
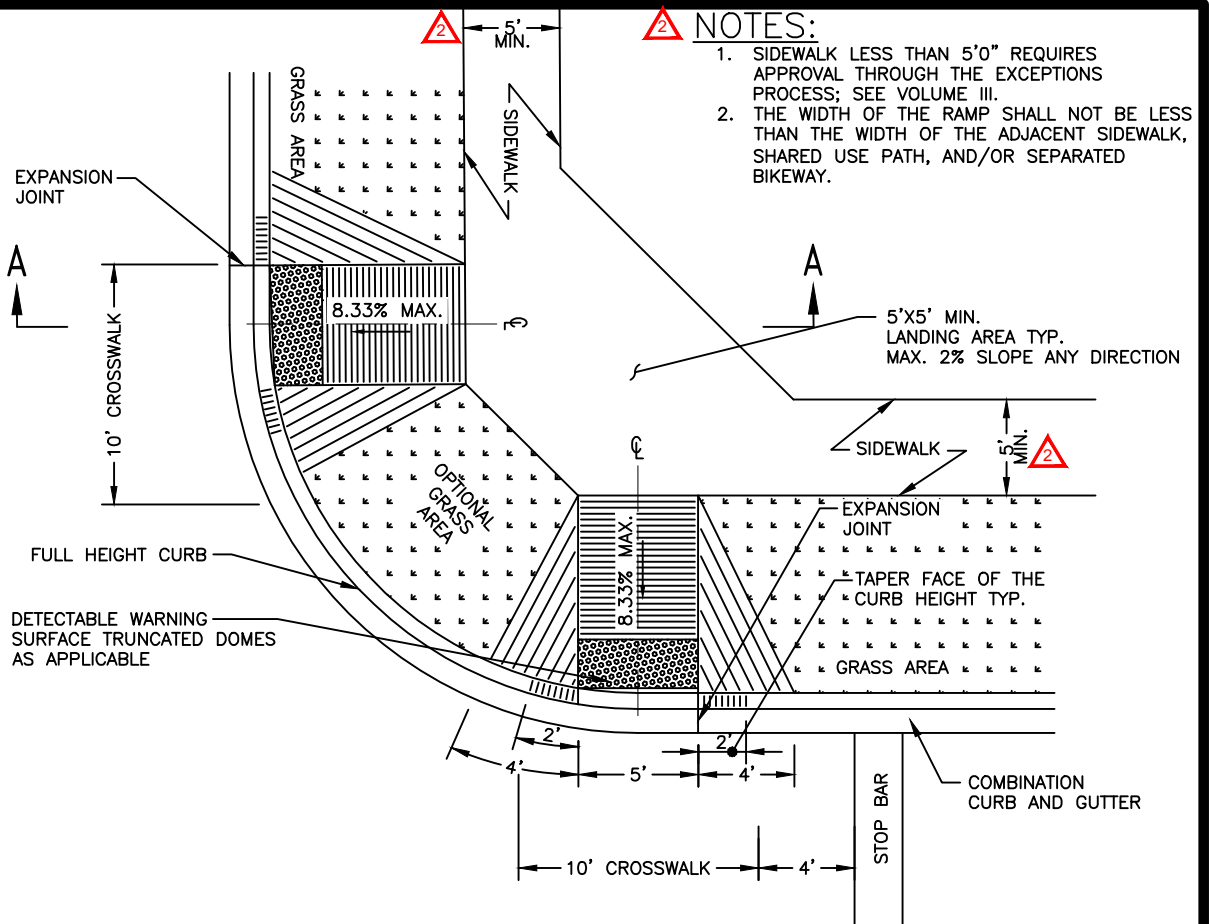
R-3.05

 PLAN



**R-4.01**





2

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1

5/30/2017

Revised

5/7/2007

Approved

Howard County, Maryland  
Department of Public Works

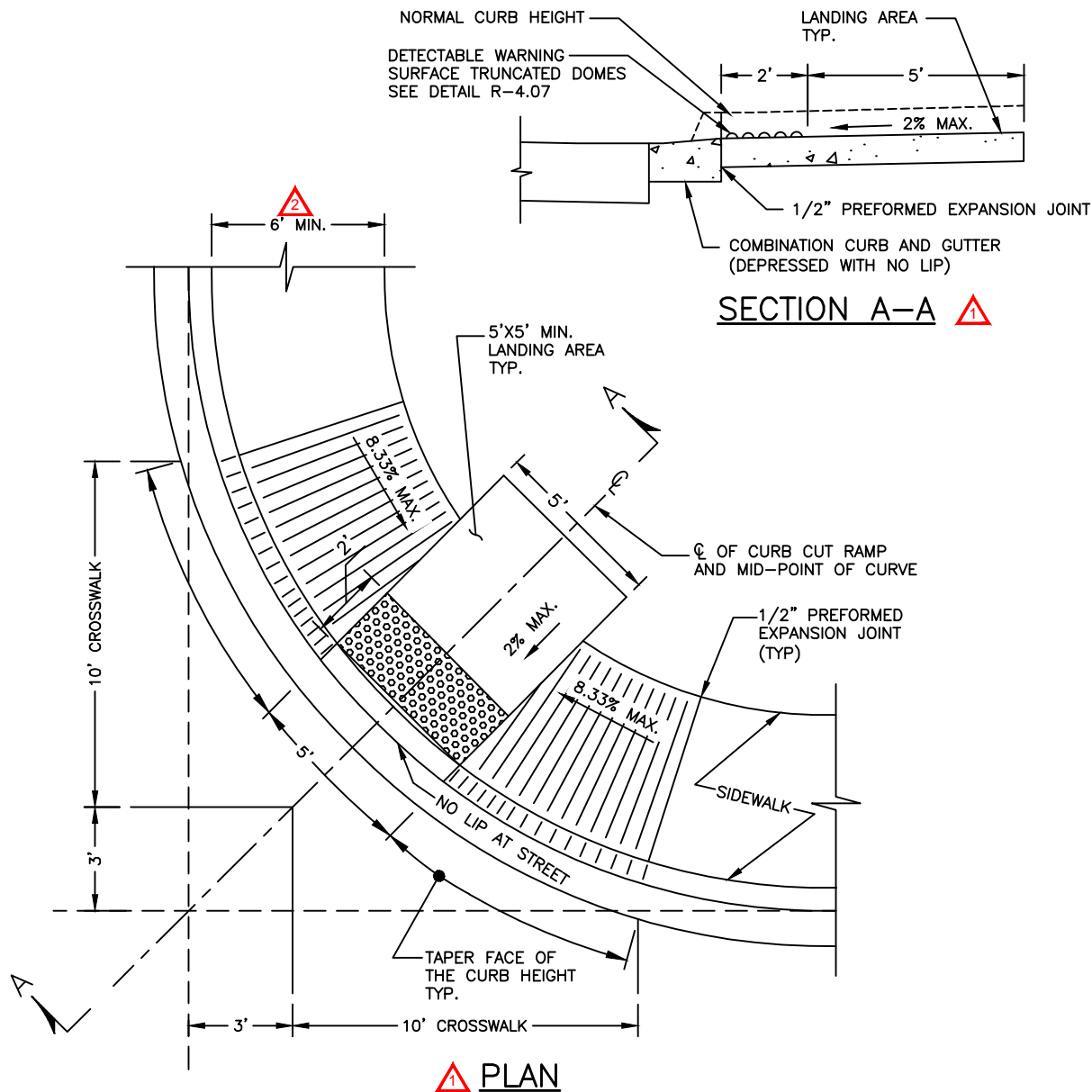
Approved:

Chief, Bureau of Engineering

SIDEWALK RAMP  
Type B  
Dual Ramp

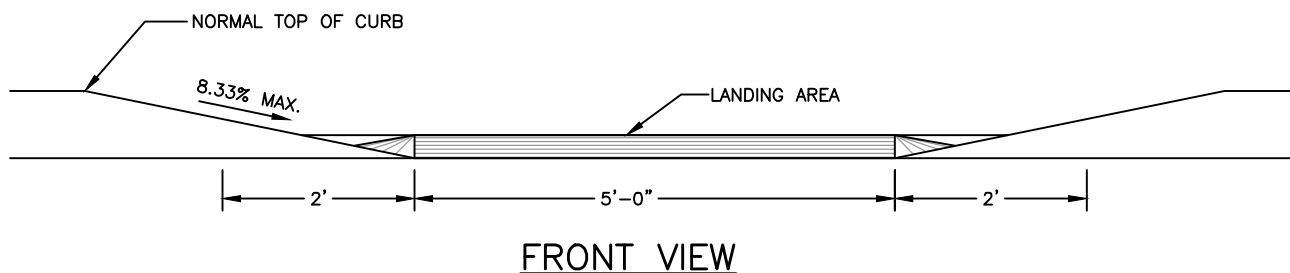
Detail

R-4.03



### NOTES:

1. TYPE C SIDEWALK RAMP IS TO BE USED AT LOCATIONS WHERE THE SIDEWALK MUST BE PLACED IMMEDIATELY ADJACENT TO THE BACK OF THE CURB. THE SIDEWALK SHALL BE AT LEAST 5'-0" IN WIDTH.
2. ALL RAMPs SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP. SEE DETAIL R-4.07.
3. 7" COMB. CURB AND GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MOD. CURB AND GUTTER AND BIT. CURB.
4. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
5. SEE DETAIL R-4.07 FOR DETECTABLE WARNING SURFACE PLACEMENT GUIDELINES.



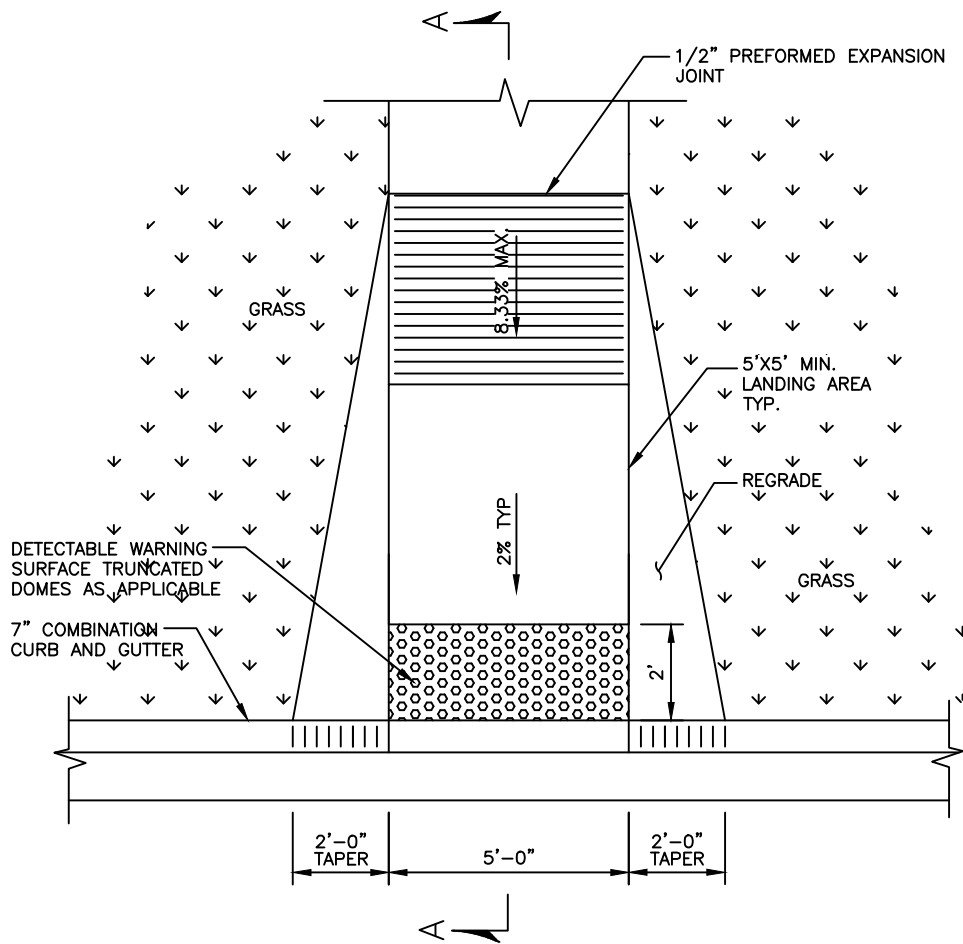
Revised  
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5/7/2007  
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Department of Public Works

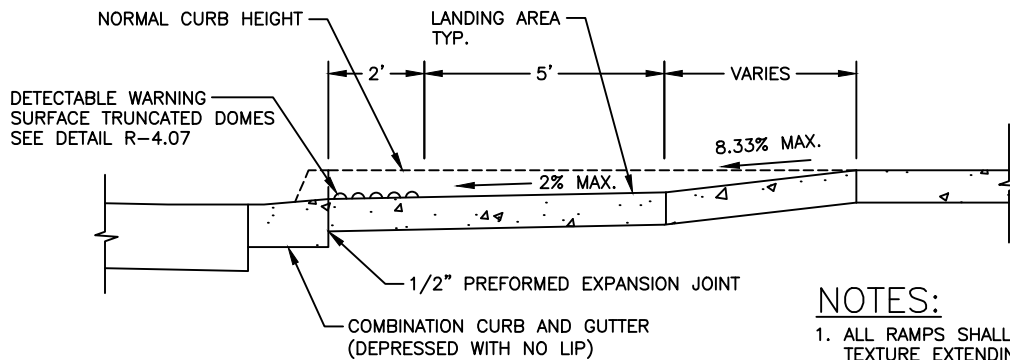
Approved: *WJ3757/Final Volume 4/signature.bmp*  
Chief, Bureau of Engineering

SIDEWALK RAMP  
Type C

Detail  
R-4.04



## 1 RAMP PERPENDICULAR TO CURB



## 1 SECTION A-A

### NOTES:

1. ALL RAMPs SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF RAMP. SEE DETAIL R-4.07.
2. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
- 2 3. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
- 2 4. THE WIDTH OF THE RAMP SHALL NOT BE LESS THAN THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY.

2

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1

5/30/2017

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5/7/2007

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Department of Public Works

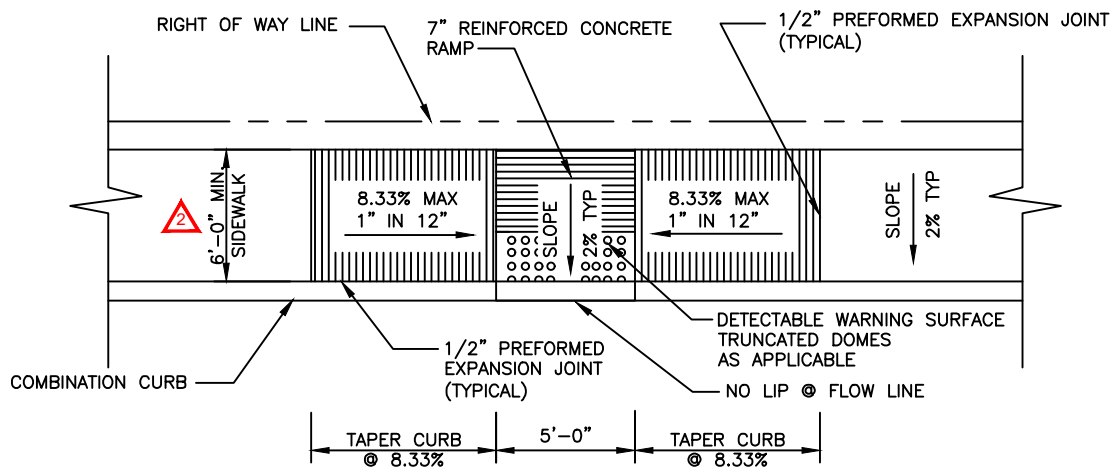
Approved: WJ3767/Final Volume 4/Signature/bmp  
Chief, Bureau of Engineering

SIDEWALK RAMP  
Layout & Grading  
Perpendicular to Curb

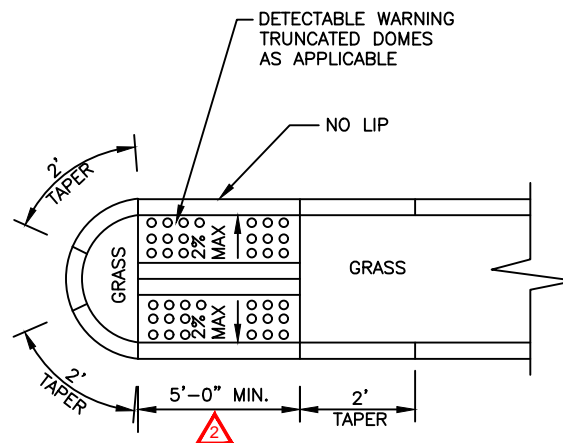
Detail

R-4.05





RAMP PARALLEL TO CURB



RAMP THRU MEDIAN

NOTES:

1. ALL RAMPS SHALL HAVE DETECTABLE WARNING SURFACES. SEE DETAIL R-4.07.
2. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
3. THE WIDTH OF THE RAMP THRU MEDIAN SHALL NOT BE LESS THAN THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY



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5/7/2007  
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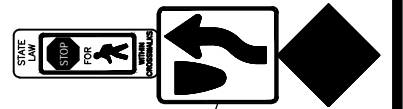
Howard County, Maryland  
Department of Public Works

Approved: WJ3767/Final Volume 4/Signature/dep  
Chief, Bureau of Engineering

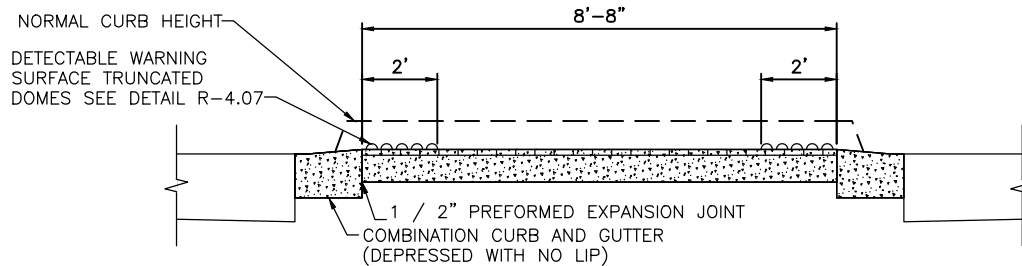
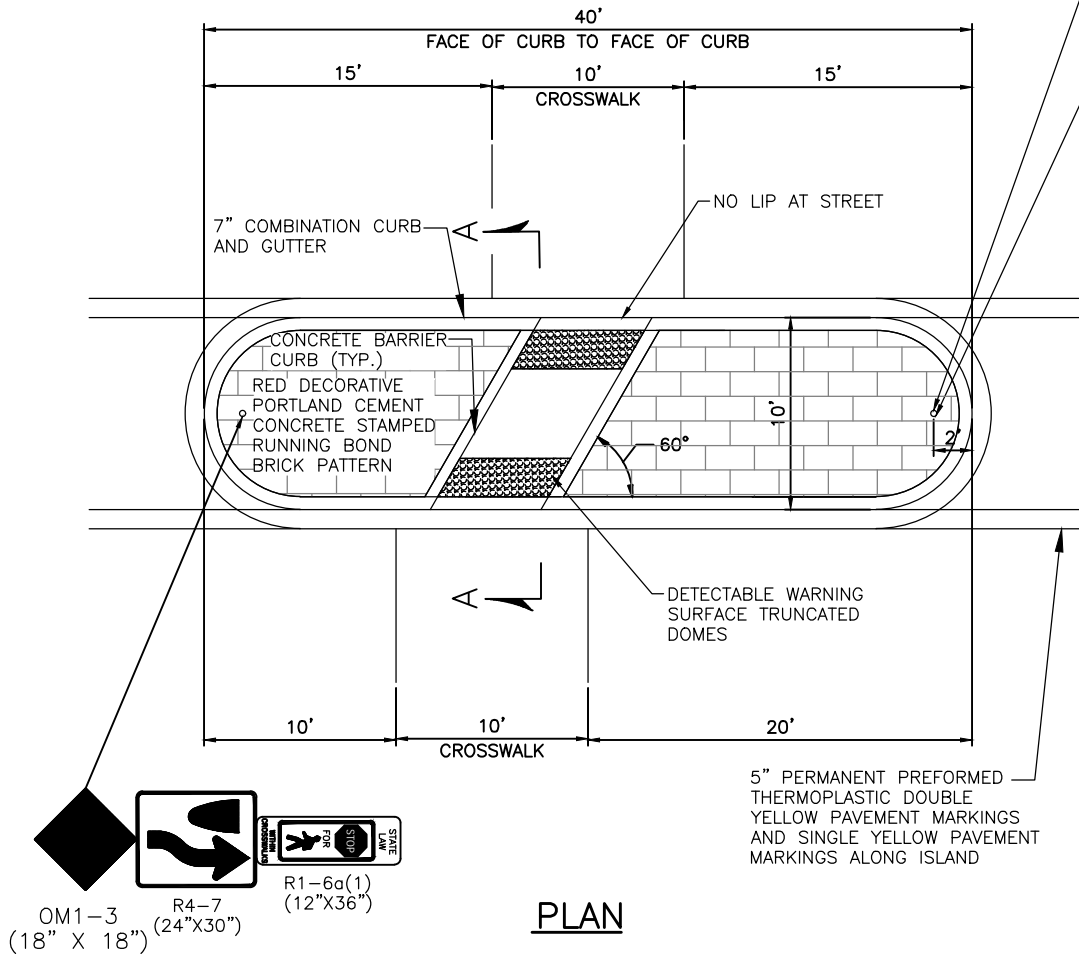
SIDEWALK RAMP  
Layout & Grading  
Parallel to Curb & Thru Median

Detail  
**R-4.06**

R1-6a(1) (12"X36") R4-7 (24"X30") OM1-3 (18" X 18")



PLACE 4" PVC SLEEVES IN ISLAND FOR TRAFFIC CONTROL SIGNS



### NOTES:

1. SEE DETAIL R-3.01 FOR 7" COMBINATION CURB AND GUTTER.
2. SEE DETAIL R-4.07 FOR DETECTABLE WARNING SURFACE.
3. SEE DETAIL R-3.03 FOR CONCRETE BARRIER CURB.
4. SEE DETAIL T-7.03 FOR PEDESTRIAN CROSSWALK DETAIL.
5. CLEAR PASSAGE BETWEEN THE MEDIAN ISLAND AND THE OUTSIDE CURB SHALL BE 12'-0" MINIMUM.
6. THE SLOPE WITHIN THE PEDESTRIAN ROUTE IN THE MEDIAN SHALL NOT EXCEED 2% IN ANY DIRECTION.

Revised

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X/X/XXXX

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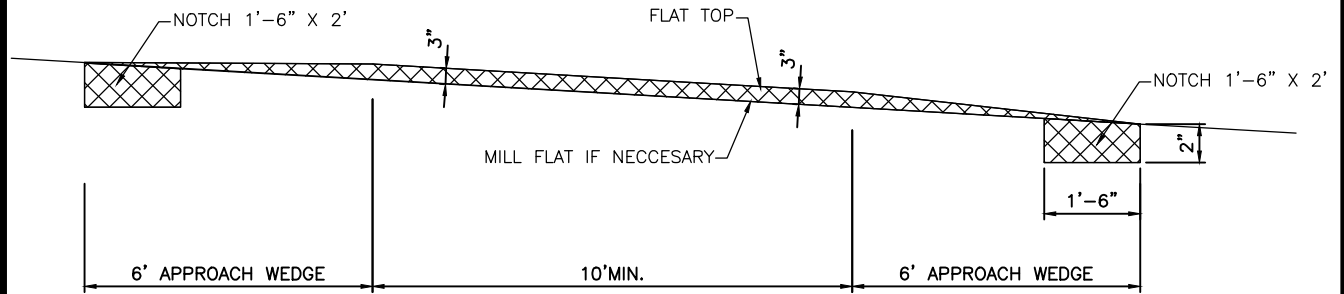
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

PEDESTRIAN  
REFUGE RAMP

Detail

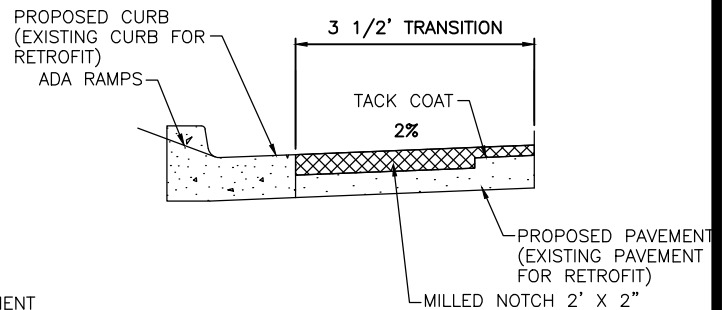
R-4.08



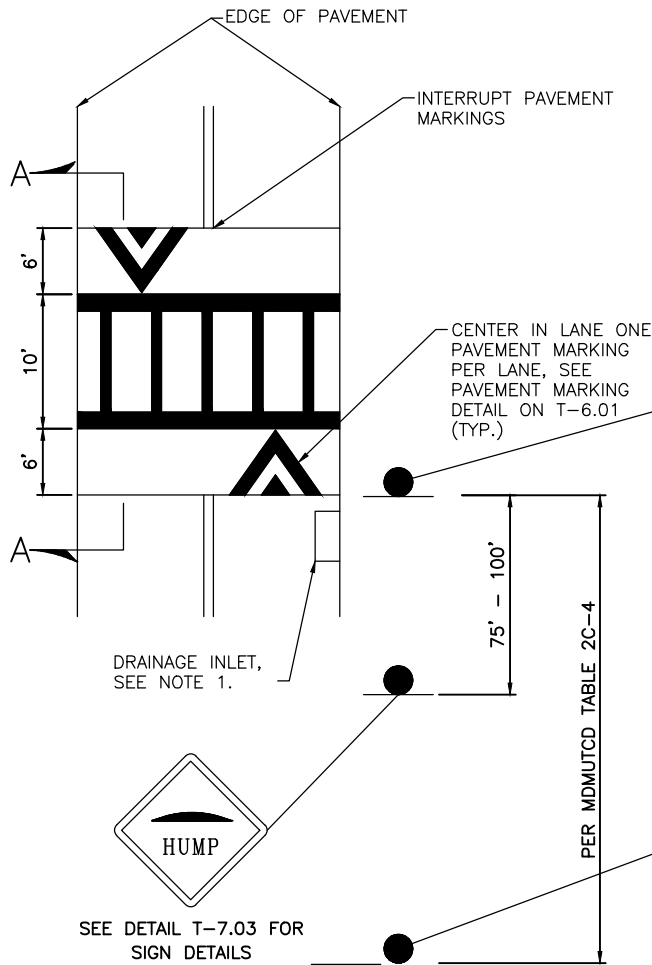
SECTION A-A

NOTES:

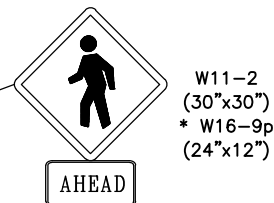
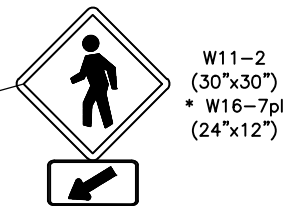
1. ACCOMMODATE FOR DRAINAGE ON UPHILL SIDE OF RAISED CROSSING BY PLACING DRAINAGE INLETS OR BY OTHER METHODS TO PREVENT PONDING.



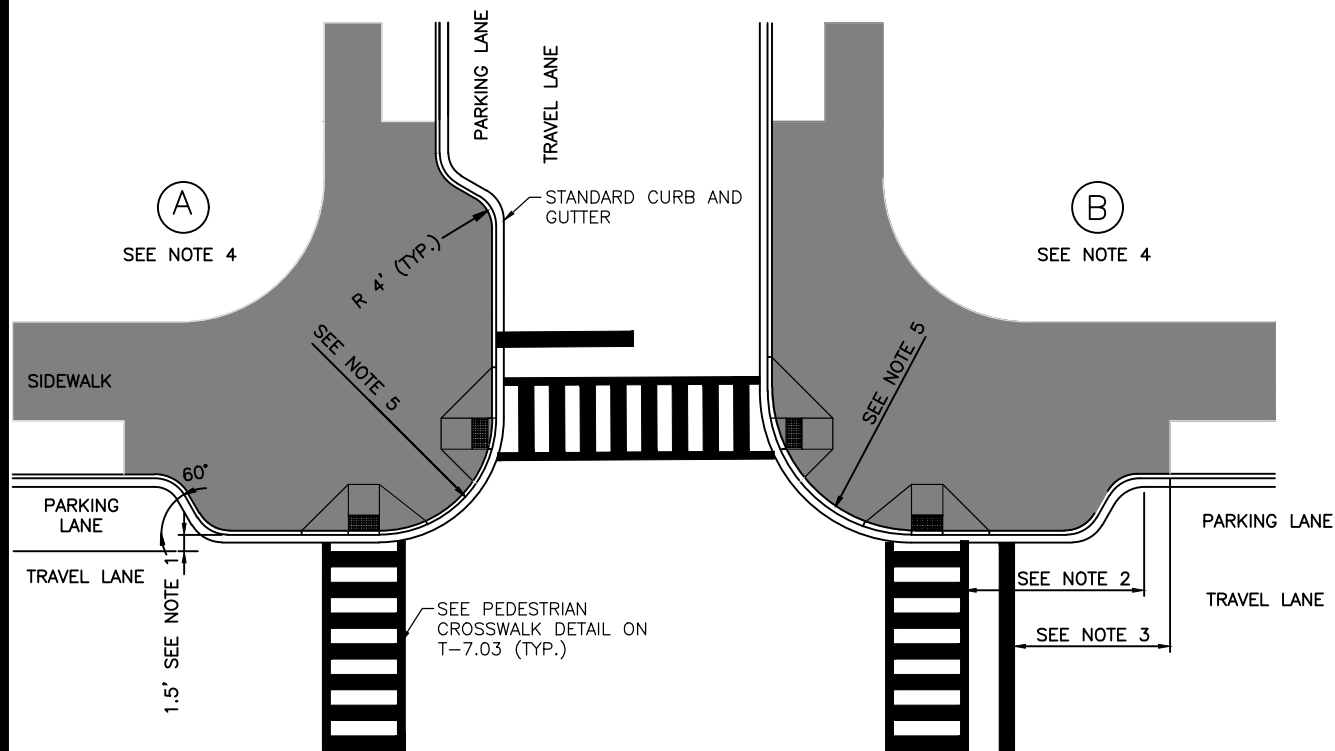
SHOULDER DETAIL FOR STREETS WITH CURBS AND CROSSWALKS



PLAN



<p>Revised</p> <p>Revised</p> <p>X/X/XXXX</p> <p>Approved</p>	<p>Howard County, Maryland Department of Public Works</p> <p>Approved: _____ Chief, Bureau of Engineering</p>	<p>RAISED CROSSWALK</p>	<p>Detail R-4.09</p>
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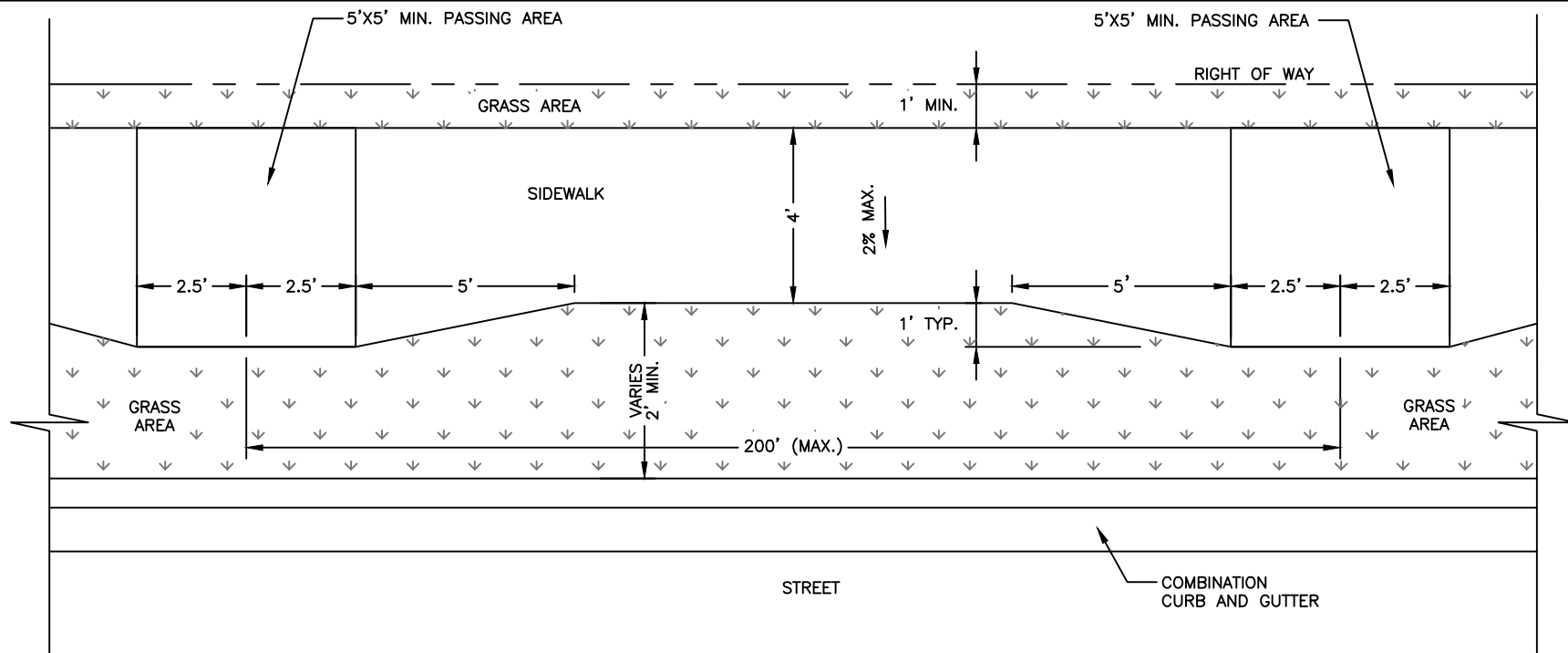


PLAN

NOTES:

1. CURB EXTENSION WIDTH IS 1.5 FEET LESS THAN THE WIDTH OF THE PARKING LANE.
2. THE DISTANCE BETWEEN THE CROSSWALK AND THE RETURN VARIES, COORDINATE WITH THE DRAINAGE, STREETScape, OR OTHER DESIGN STANDARDS.
3. THE BEGINNING OF THE PARKING LANE IS 20' MIN. BEHIND THE STOP BAR AND 30' MIN. BEHIND STOP SIGN, OR YIELD SIGN.
4. CURB EXTENSIONS MAY BE PRESENT ON BOTH SIDES OF THE CORNER (A) OR ON ONLY ONE SIDE (B).
5. CURB RADIUS MUST ACCOMMODATE THE DESIGN VEHICLE AND CONTROL VEHICLE PER VOLUME III OF THE DESIGN MANUAL.

<p>Revised</p> <p>Revised</p> <p>X/X/XXXX</p> <p>Approved</p>	<p>Howard County, Maryland Department of Public Works</p> <p>Approved: _____ Chief, Bureau of Engineering</p>	<p>INTERSECTIONS Curb Extensions</p>	<p>Detail R-4.10</p>
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PLAN

### NOTES

1. REFER TO R-3.05 FOR NOTES
2. DRIVEWAY APRON MAY BE USED IN PLACE OF PASSING AREA IF DESIGN SHOWS ALL OF THE REQUIREMENTS ARE MET.
3. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.



Revised

Revised

5/30/2017

Approved

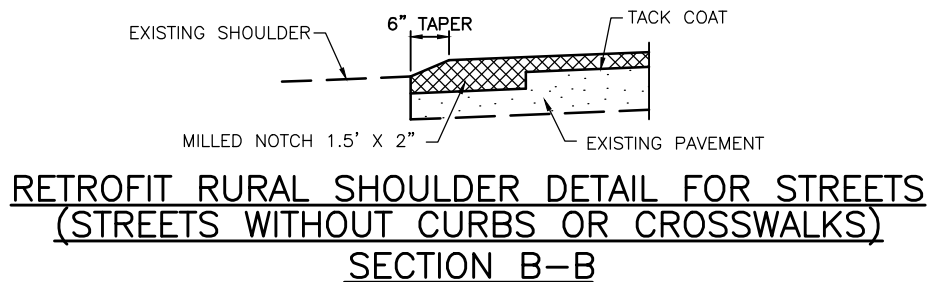
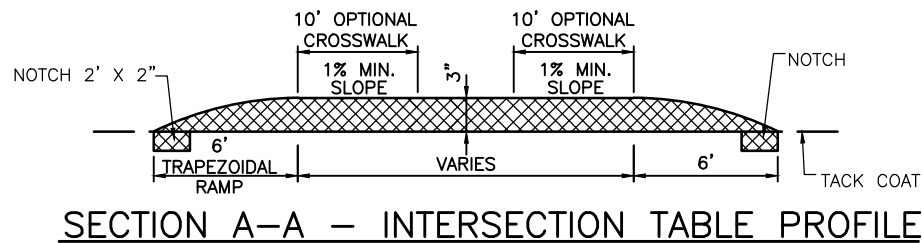
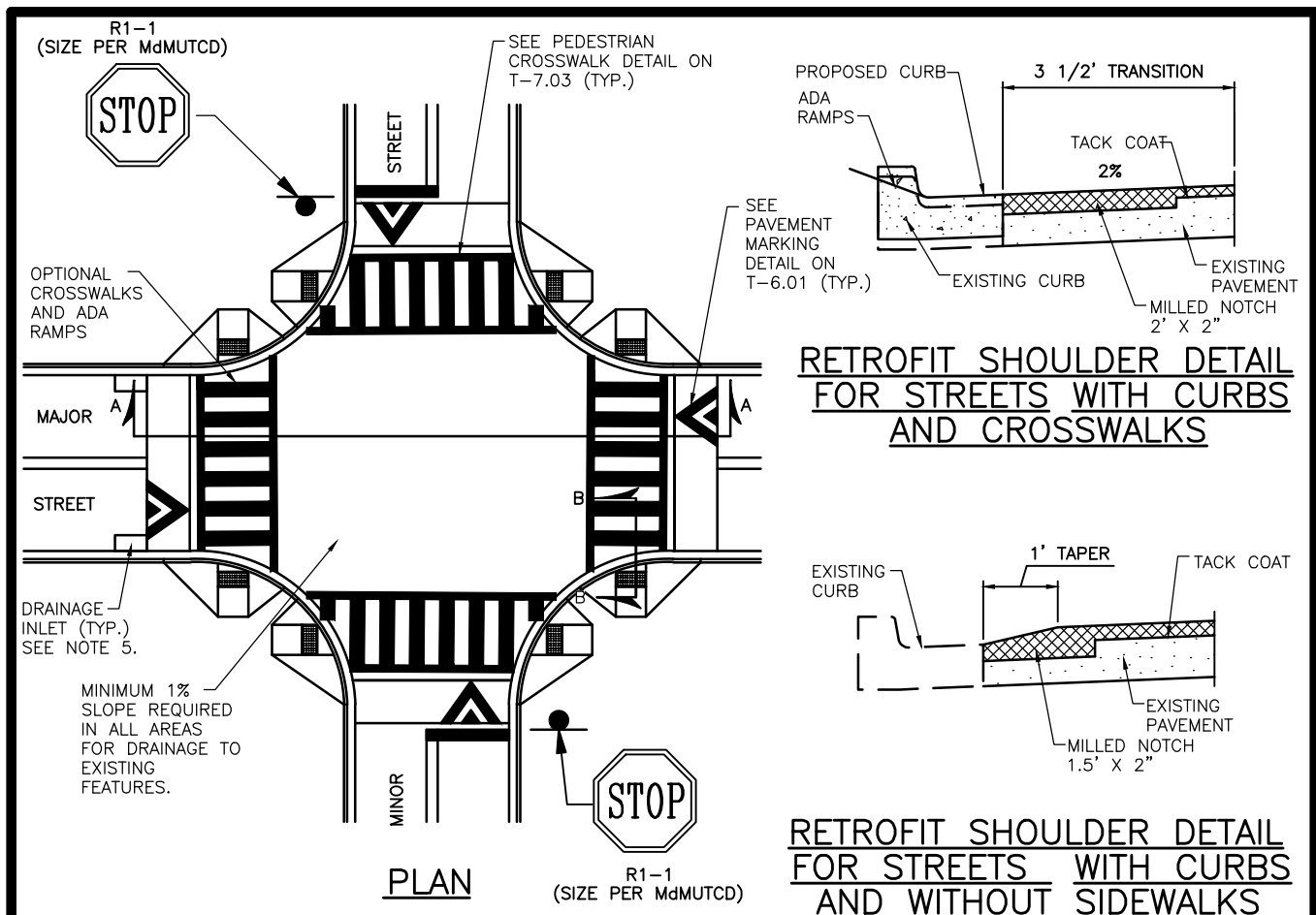
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

SIDEWALK  
Passing Area

Detail

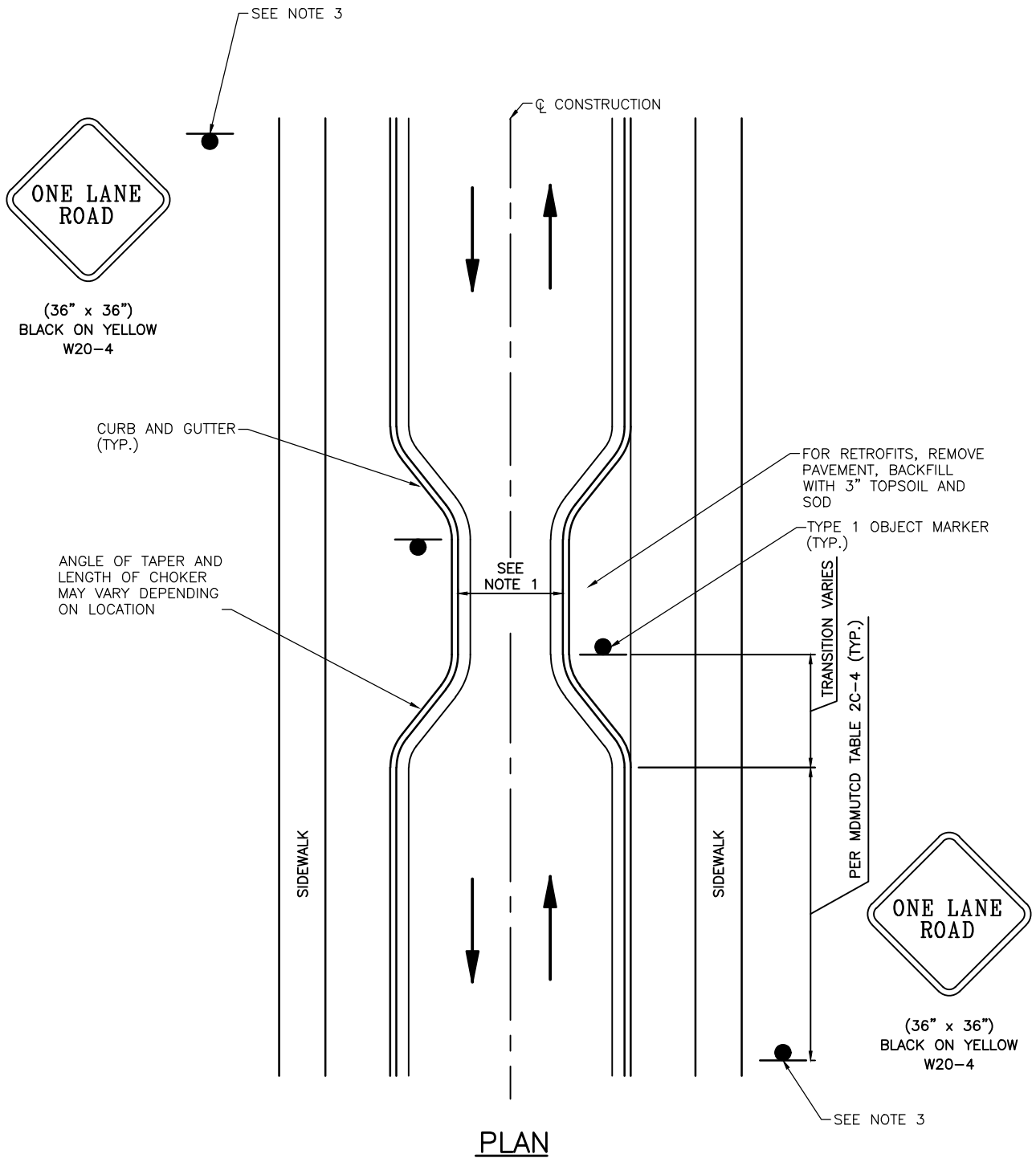
R-4.11



#### NOTES:

1. THIS TRAFFIC CALMING MEASURE IS RESTRICTED TO USE ON ROADWAYS WITH A 30 M.P.H. MAXIMUM POSTED SPEED LIMIT.
2. APPROVED DECORATIVE PAVEMENTS CAN BE USED TO INCREASE VISIBILITY AND AESTHETIC QUALITY.
3. IF CROSSWALKS ARE USED, TRAPEZOIDAL RAMP MUST BE OUTSIDE OF THE CROSSWALK.
4. THE LIMITS OF THE INTERSECTION TABLE WILL BE DETERMINED ON A CASE BY CASE BASIS.
5. PROVIDE DRAINAGE INLETS ON UPHILL SIDE OF INTERSECTION TO PREVENT PONDING WHERE REQUIRED.

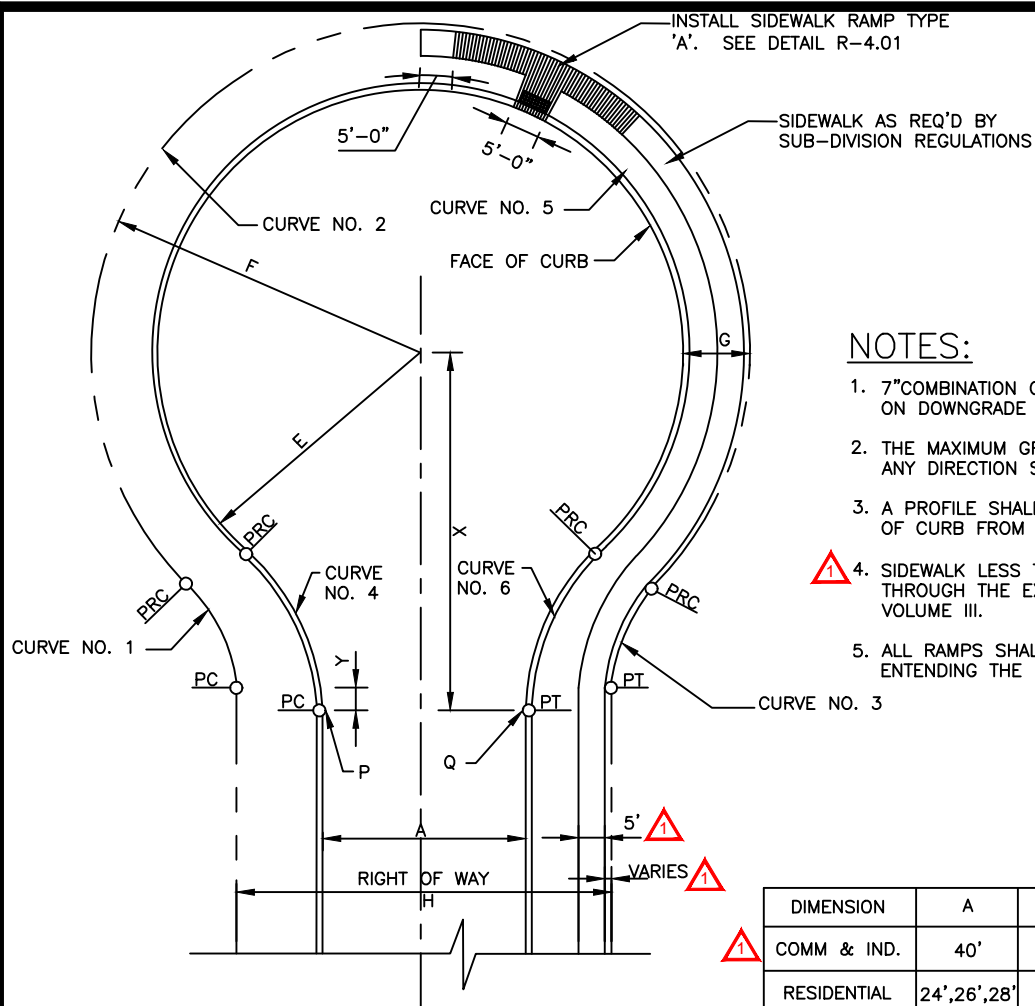
Revised	Howard County, Maryland Department of Public Works	INTERSECTION TABLE	Detail R-4.12
Revised			
X/X/XXXX	Approved: _____		
Approved	Chief, Bureau of Engineering		



### NOTES:

1. WIDTH OF PAVEMENT THROUGH CHOKER IS 16' FOR A ONE LANE CHOKER AND 22' FOR A TWO LANE CHOKER.
2. PROVIDE PEDESTRIAN CROSSING WITH SIDEWALK RAMPS, WHERE DESIRED.
3. ADVANCED WARNING SIGNS NECESSARY ONLY FOR ONE-LANE CHOKER, PLACE SIGNS PER MD MUTCD TABLE 2C-4.

<p>Revised</p> <hr/> <p>Revised</p> <hr/> <p>X/X/XXXX</p> <hr/> <p>Approved</p>	<p>Howard County, Maryland Department of Public Works</p> <p>Approved: _____ Chief, Bureau of Engineering</p>	<p>MIDBLOCK STREET NARROWING – CHOKER</p>	<p>Detail</p> <p><b>R-4.13</b></p>
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### NOTES:

1. 7" COMBINATION CURB & GUTTER SHALL BE USED ON DOWNGRADE CUL-DE-SACS.
2. THE MAXIMUM GRADE OF THE CIRCULAR AREA IN ANY DIRECTION SHALL NOT EXCEED 6%.
3. A PROFILE SHALL BE PROVIDED ALONG THE TOP OF CURB FROM POINT P TO POINT Q.
4. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
5. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.

DIMENSION	A	E	F	G	H
COMM & IND.	40'	47'	60'	13'	76'
RESIDENTIAL	24', 26', 28'	45'	55'	10'	50'

### CURVE DATA

COMMERICAL-INDUSTRIAL (40' APPROACH) X=61.70', Y=-3.11' L.P.=286.25'					RESIDENTIAL (24' APPROACH) X=64.74', Y=2.29' L.P.=292.23'				
Δ	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5	Δ	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5
Δ	42' 10'06"	264' 20'12"	47' 16'04"	274' 32'09"	Δ	51' 19'04"	282' 38'08"	54' 01'03"	251' 57'35"
R	25.00'	60.00'	37.00'	47.00'	R	25.00'	55.00'	35.00'	45.00'
L	18.40'	276.81'	30.52'	225.20'	L	22.39'	271.31'	33.00'	226.33'
T	9.64'	—	16.19'	—	T	12.01'	—	17.84'	—
L.C.	17.99'	—	29.67'	—	L.C.	21.65'	—	31.79'	—
RESIDENTIAL (26' APPROACH) X=64.00', Y=3.64' L.P.=289.74'					RESIDENTIAL (28' APPROACH) X=63.24', Y=1.55' L.P.=287.22'				
Δ	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5	Δ	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5
Δ	51' 19'04"	282' 38'08"	53' 07'48"	286' 15'37"	Δ	51' 19'04"	282' 38'08"	53' 13'46"	284' 27'32"
R	25.00'	55.00'	35.00'	45.00'	R	25.00'	55.00'	35.00'	45.00'
L	22.39'	271.31'	32.46'	224.83'	L	22.39'	271.31'	31.91'	223.41'
T	12.01'	—	17.50'	—	T	12.01'	—	17.16'	—
L.C.	21.65'	—	31.30'	—	L.C.	21.65'	—	30.81'	—



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5/7/2007  
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Department of Public Works

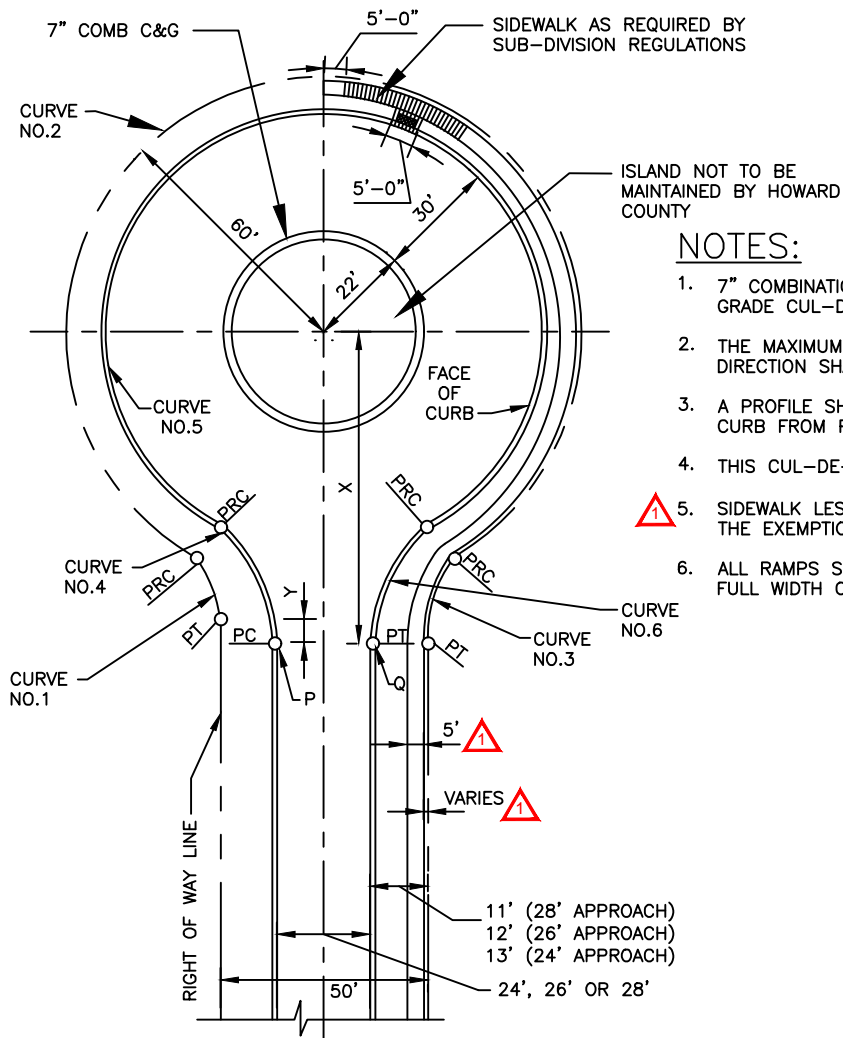
Approved: W13767/Final Volume 4/Signaturebnp  
Chief, Bureau of Engineering

CUL-DE-SAC  
without Island

Detail

R-5.01





### NOTES:

1. 7" COMBINATION CURB & GUTTER SHALL BE USED ON DOWN GRADE CUL-DE-SAC.
2. THE MAXIMUM GRADE OF THE CIRCULAR AREA IN ANY DIRECTION SHALL NOT EXCEED 6%.
3. A PROFILE SHALL BE PROVIDED ALONG THE TOP OF THE CURB FROM POINT P TO POINT Q.
4. THIS CUL-DE-SAC TO BE USED IN RESIDENTIAL AREAS ONLY.
5. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXEMPTIONS PROCESS; SEE VOLUME III.
6. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.

RESIDENTIAL (24' APPROACH) X=73.21', Y=4.47' L.P.=337.38'				
	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5
$\Delta$	53° 58'05"	287° 56'10"	57° 18'03"	294° 36'05"
R	25.00'	60.00'	35.00'	52.00'
L	23.55'	301.53'	35.00'	267.37'
T	12.73'	—	19.12'	—
L.C.	22.69'	—	33.56'	—

RESIDENTIAL (26' APPROACH) X=72.56', Y=3.82' L.P.=334.99'				
	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5
$\Delta$	53° 58'05"	287° 56'10"	56° 30'53"	293° 01'45"
R	25.00'	60.00'	35.00'	52.00'
L	23.55'	301.53'	34.52'	265.94'
T	12.73'	—	18.81'	—
L.C.	22.69'	—	33.14'	—

RESIDENTIAL (28' APPROACH) X=71.89', Y=3.15' L.P.=332.58'				
	CURVE 1&3	CURVE 2	CURVE 4&6	CURVE 5
$\Delta$	53° 58'05"	287° 56'10"	55° 43'17"	291° 26'34"
R	25.00'	60.00'	35.00'	52.00'
L	23.55'	301.53'	34.04'	264.50'
T	12.73'	—	18.50'	—
L.C.	22.69'	—	32.71'	—



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5/7/2007  
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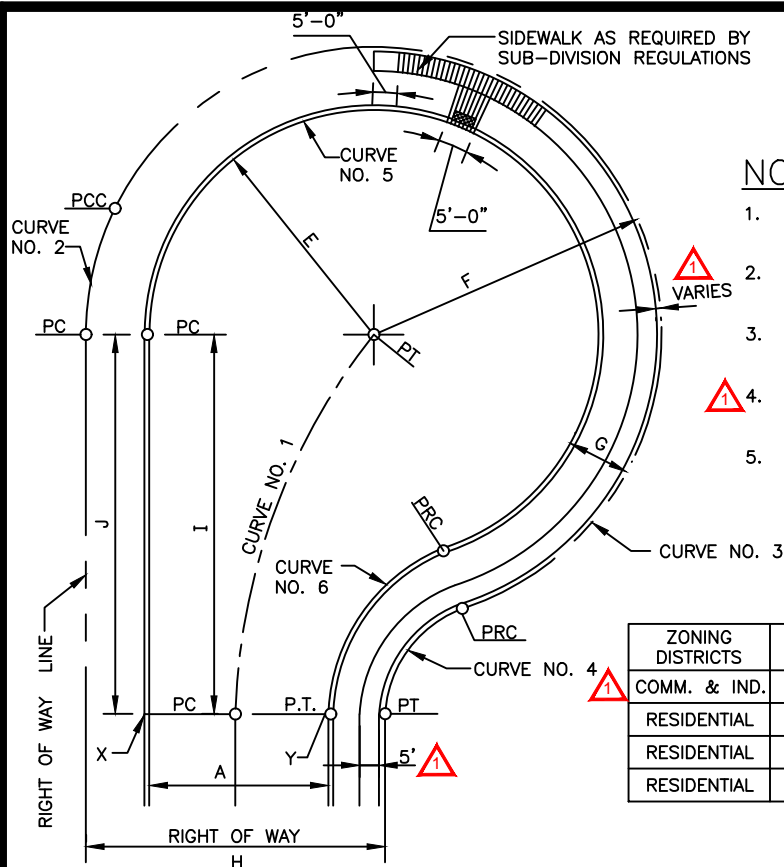
Howard County, Maryland  
Department of Public Works

Approved: W13767/Final Volume 4/signature.bmp  
Chief, Bureau of Engineering

CUL-DE-SAC  
with Island

Detail

R-5.02



## NOTES:

- 7" COMBINATION CURB & GUTTER SHALL BE USED ON DOWNGRADE CUL-DE-SACS.
- THE MAXIMUM GRADE OF THE CIRCULAR AREA IN ANY DIRECTION SHALL NOT EXCEED 6%.
- A PROFILE SHALL BE PROVIDED ALONG THE TOP OF CURB FROM POINT X TO POINT Y.
- SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
- ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.

ZONING DISTRICTS	A	E	F	G	I	J	H
COMM. & IND.	40'	47'	61'	14'	78.46'	68.66'	76'
RESIDENTIAL	28'	45'	55'	10'	77.95'	68.51'	50'
RESIDENTIAL	26'	45'	55'	10'	78.38'	65.12'	50'
RESIDENTIAL	24'	45'	55'	10'	78.77'	62.61'	50'

## CURVE DATA

COMMERCIAL - INDUSTRIAL 40' APPROACH L.P.=327.39'							RESIDENTIAL 28' APPROACH L.P.=326.83'						
CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6		CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6	
Δ 37°58'45"	44°24'55"	200°50'17"	65°15'13"	249°04'31"	69°04'31"	Δ	43°22'31"	12°06'05"	244°09'34"	76°59'50"	256°59'50"	76°59'50"	Δ
R 127.50'	75.00'	61.00'	25.00'	47.00'	37.00'	R	113.50'	100.00'	55.00'	25.00'	45.00'	35.00'	R
L 84.51'	58.14'	213.82'	28.47'	204.32'	44.61'	L	85.92'	21.12'	234.38'	33.60'	201.85'	47.03'	L
T 43.88'	30.62'	—	16.00'	—	25.47'	T	45.14'	10.60'	—	19.88'	—	27.84'	T
L.C. 82.98'	56.69'	—	26.96'	—	41.95'	L.C.	83.89'	21.08'	—	31.12'	—	43.57'	L.C.

RESIDENTIAL 26' APPROACH L.P.=329.31'							RESIDENTIAL 24' APPROACH L.P.=331.73'						
CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6		CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6	
Δ 44°24'55"	17°08'46"	239°51'03"	76°59'50"	258°27'47"	78°27'47"	Δ	45°27'50"	21°02'22"	236°41'30"	76°59'50"	259°55'17"	79°55'17"	Δ
R 112.00'	100.00'	55.00'	25.00'	45.00'	35.00'	R	110.50'	100.00'	55.00'	25.00'	45.00'	35.00'	R
L 86.82'	29.93'	230.24'	33.60'	203.00'	47.93'	L	87.68'	36.72'	227.21'	33.60'	204.14'	48.82'	L
T 45.72'	15.08'	—	19.88'	—	28.58'	T	46.30'	18.57'	—	19.88'	—	29.33'	T
L.C. 84.66'	29.81'	—	31.12'	—	44.27'	L.C.	85.40'	36.52'	—	31.12'	—	44.96'	L.C.



Revised  
5/30/2017  
Revised  
5/7/2007  
Approved

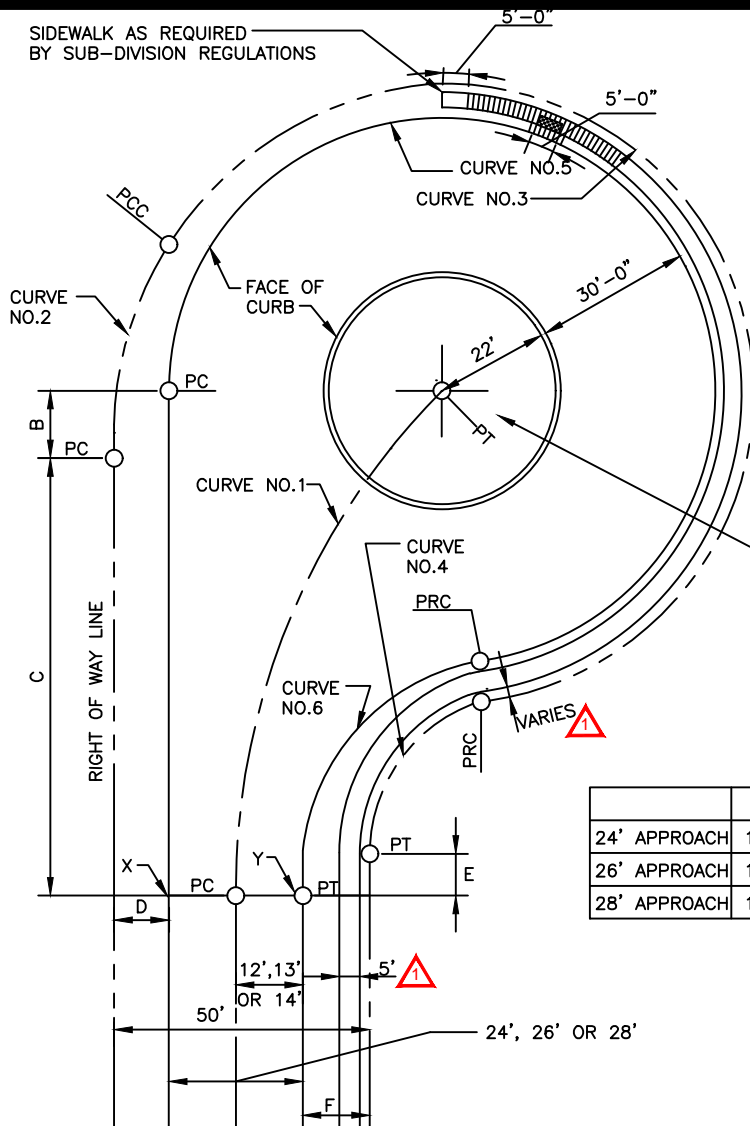
Howard County, Maryland  
Department of Public Works

Approved: W13767/Final Volume 4/Signature/dep  
Chief, Bureau of Engineering

CUL-DE-SAC  
Offset  
without Island

Detail  
R-5.03

SIDEWALK AS REQUIRED  
BY SUB-DIVISION REGULATIONS



## NOTES:

1. 7" COMBINATION CURB & GUTTER SHALL BE USED ON DOWN GRADE CUL-DE-SACS.
2. MAXIMUM GRADE OF THE CIRCULAR AREA IN ANY DIRECTION SHALL NOT EXCEED 6%.
3. A PROFILE SHALL BE PROVIDED ALONG THE TOP OF CURB FROM POINT X TO POINT Y.
4. THIS CUL-DE-SAC TO BE USED IN RESIDENTIAL AREAS ONLY.
5. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.,
6. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.
7. BACK OF CURB NOT SHOWN HERE FOR CLARITY PURPOSES.

	B	C	D	E	F
24' APPROACH	19.37'	67.35'	13.00'	2.31'	13.00'
26' APPROACH	17.44'	69.10'	12.00'	2.25'	12.00'
28' APPROACH	15.20'	71.10'	11.00'	2.15'	11.00'

## CURVE DATA

RESIDENTIAL 24' APPROACH L.P.=379.73'							RESIDENTIAL 26' APPROACH L.P.=362.23'						
	CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6		CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6
Δ	49°31'28"	28°57'18"	234°17'19"	83°14'37"	265°23'06"	85°23'06"	Δ	48°31'18"	25°50'31"	236°43'21"	82°33'52"	264°03'44"	84°03'44"
R	114.00'	100.00'	60.00'	25.00'	52.00'	35.00'	R	115.00'	100.00'	60.00'	25.00'	52.00'	35.00'
L	98.54'	50.54'	245.35'	36.32'	240.86'	52.16'	L	97.81'	45.10'	247.90'	36.03'	239.66'	51.35'
T	52.58'	25.82'	—	22.21'	—	32.29'	T	52.06'	22.94'	—	21.95'	—	31.55'
L.C.	95.50'	50.00'	—	33.21'	—	47.46'	L.C.	94.92'	44.72'	—	32.99'	—	46.87'

RESIDENTIAL 28' APPROACH L.P.=360.48'						
	CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5	CURVE 6
Δ	47°31'45"	22°19'54"	239°33'09"	81°53'03"	262°44'11"	82°44'11"
R	117.00'	100.00'	60.00'	25.00'	52.00'	35.00'
L	97.06'	38.98'	250.86'	35.73'	238.45'	50.54'
T	51.52'	19.74'	—	21.69'	—	30.82'
L.C.	94.30'	38.73'	—	32.76'	—	46.26'



Revised  
5/30/2017  
Revised  
5/7/2007  
Approved

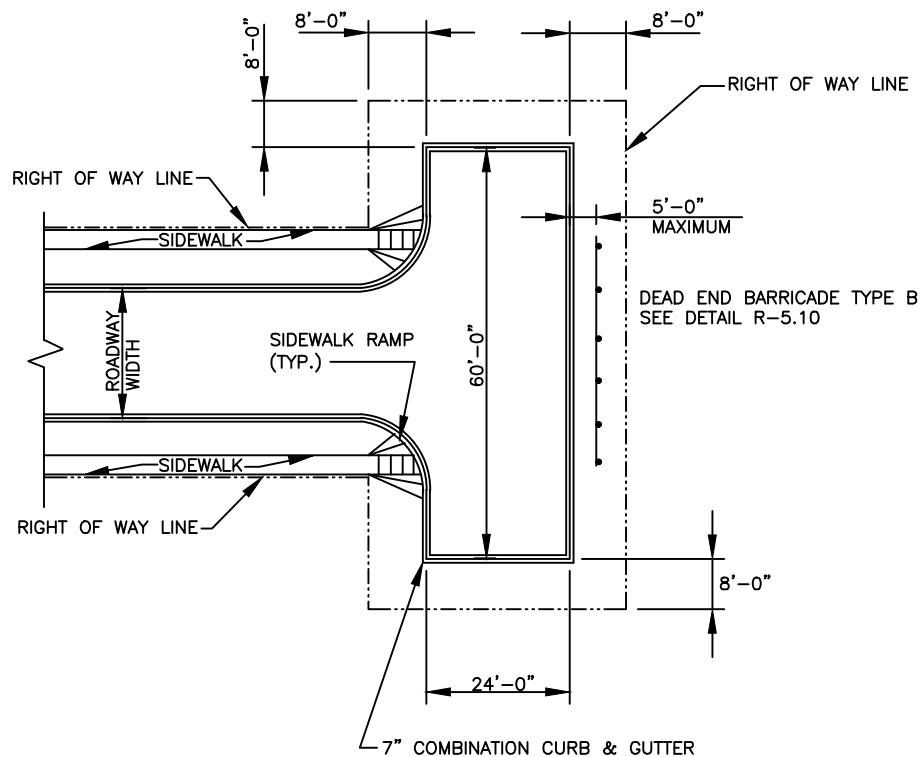
Howard County, Maryland  
Department of Public Works

Approved: HW33767/Finl. Volume 4/signature.bmp  
Chief, Bureau of Engineering

CUL-DE-SAC  
Offset  
with Island

Detail

R-5.04



### NOTES:

1. PERMANENT TEE SHALL ONLY BE INSTALLED ON RESIDENTIAL STREETS WITH LESS THAN 200 ADT.
2. THE LENGTH OF THE BARRICADE IS TO EQUAL THE WIDTH OF THE ROADWAY.
3. INSTALL SIGNS R7-1 (1) "NO PARKING", R7-4 "NO STANDING", R7-4 (1) "NO STOPPING" AS DIRECTED BY DPW.
4. INSTALL SIGNS OM-1 (2) "END OF ROAD BARRIER" BEHIND BARRICADE. SIGNS TO BE INSTALLED 12' APART. MINIMUM 2 SIGNS PER TEE TURN-AROUND.
5. THERE SHALL BE NO DRIVEWAYS ALONG THE 60'-0" EDGE OF THE TEE TURN-AROUND. ONE DRIVEWAY IS PERMITTED AT EACH 24'-0" END OF THE TEE TURN-AROUND.



Revised  
5/30/2017  
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5/7/2007  
Approved

Howard County, Maryland  
Department of Public Works

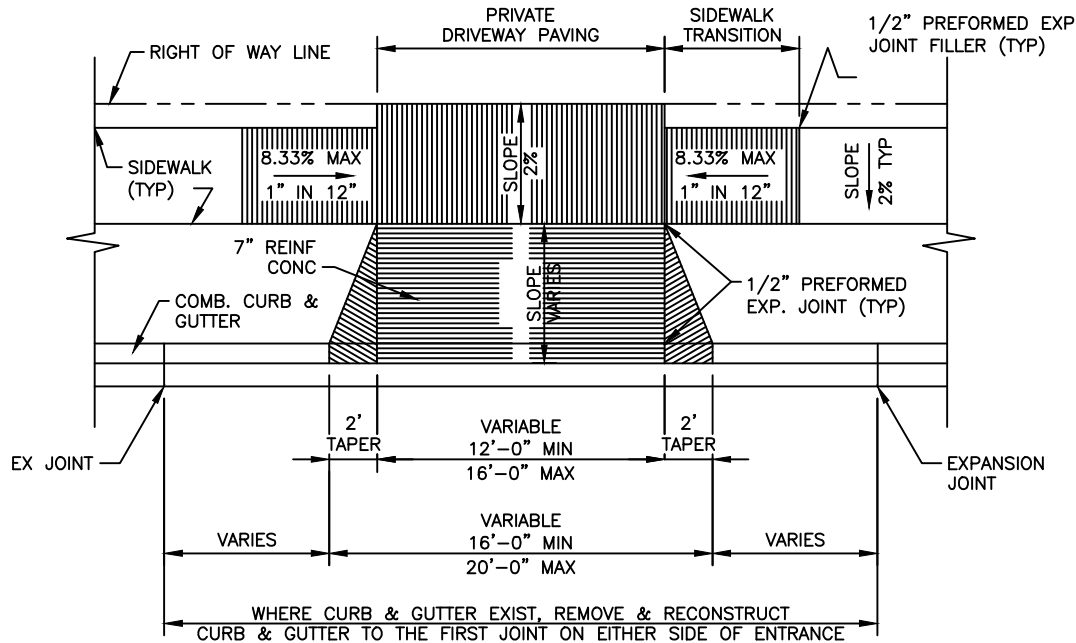
Approved: WJ3767/Final Volume 4/Signature.bmp  
Chief, Bureau of Engineering

TEE TURN-AROUND  
Permanent  
(<200 ADT)

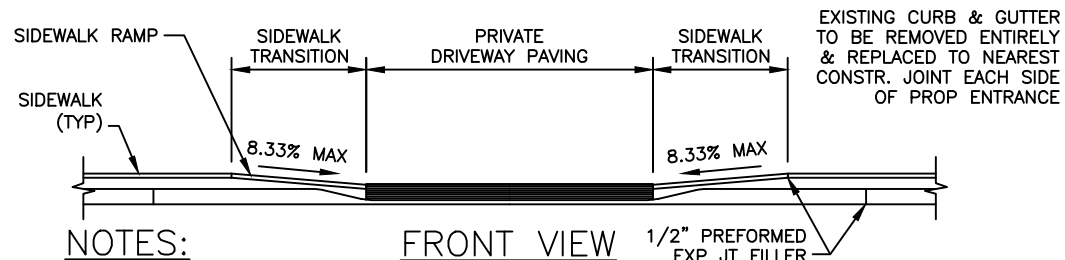
Detail

R-5.05





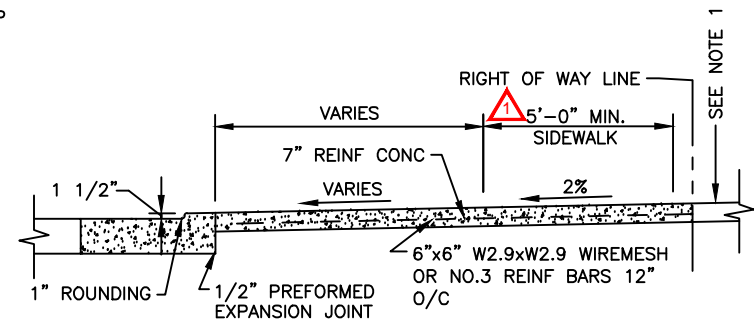
PLAN



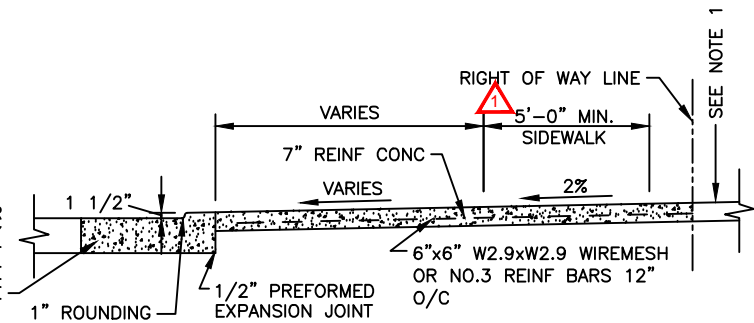
FRONT VIEW

NOTES:

1. PRIVATE DRIVEWAY (IF CONC, 1/2" PREFORMED EXP JT IS TO BE PROVIDED AT R/W LINE.)
2. TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 15%.
3. ALL RAMPS SHALL HAVE A TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
4. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
5. THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY.



SECTION  
DRIVEWAY IN NEW CURB



SECTION  
DRIVEWAY IN EXISTING CURB



Revised

5/30/2017

Revised

5/7/2007

Approved

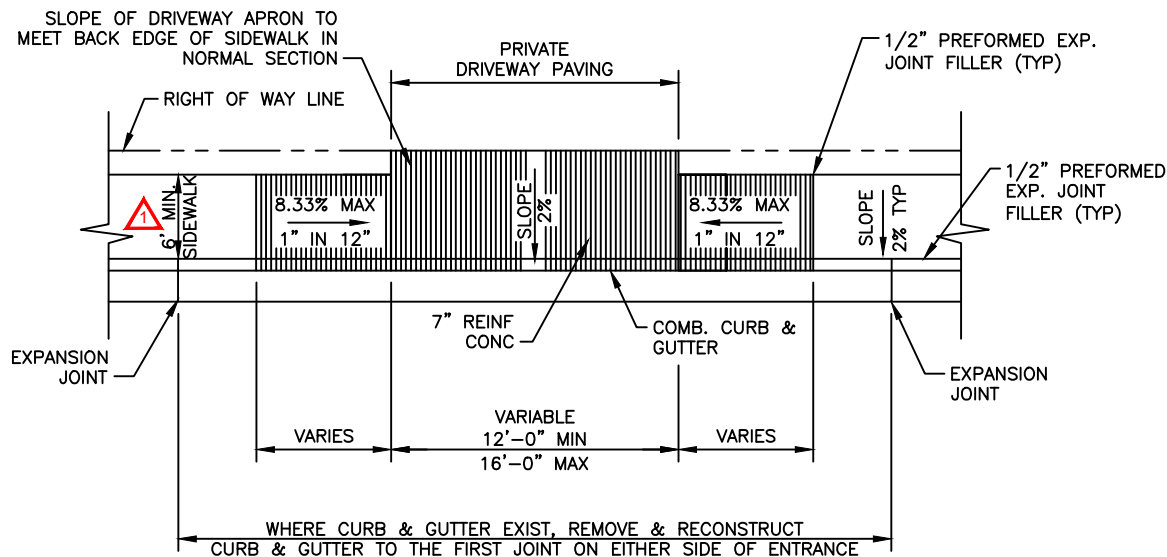
Howard County, Maryland  
Department of Public Works

Approved: HW32767/Final Volume 4/Signature/amp  
Chief, Bureau of Engineering

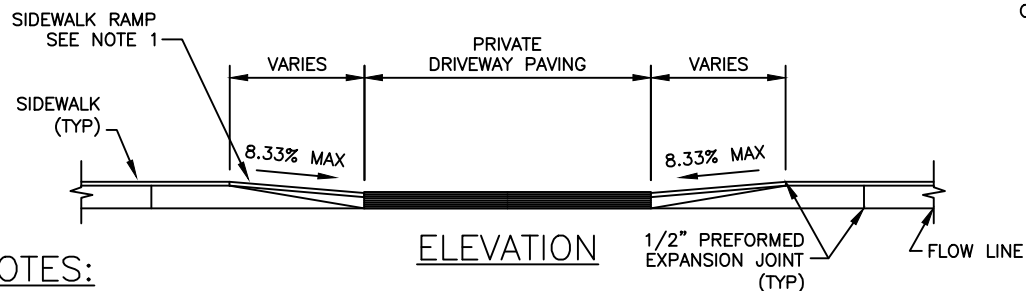
RESIDENTIAL DRIVEWAY ENTRANCE  
7" Combination Curb and Gutter  
Sidewalk Setback from Curb

Detail

R-6.01



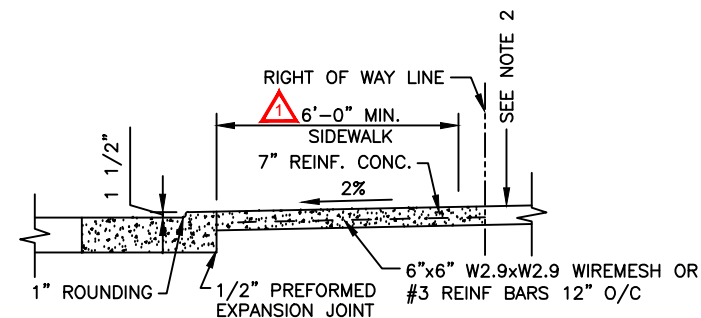
PLAN



ELEVATION

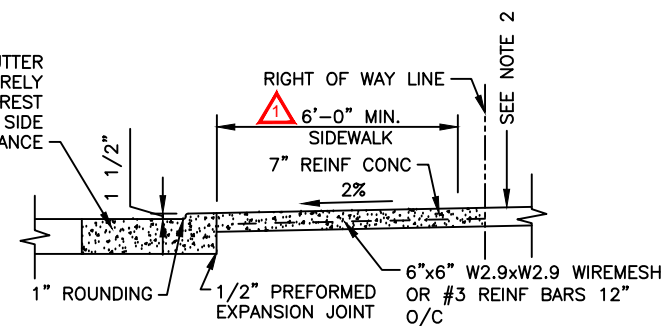
NOTES:

1. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.
2. TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 15%.
3. PRIVATE DRIVEWAY PAVING (IF CONC, 1/2" PREFORMED EXP JT IS TO BE PROVIDED AT R/W LINE.)
4. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.



SECTION  
DRIVEWAY IN NEW CURB

EXISTING CURB & GUTTER  
TO BE REMOVED ENTIRELY  
& REPLACED TO NEAREST  
CONSTR. JOINT EACH SIDE  
OF PROP ENTRANCE



SECTION  
DRIVEWAY IN EXISTING CURB



Revised

5/30/2017

Revised

5/7/2007

Approved

Howard County, Maryland  
Department of Public Works

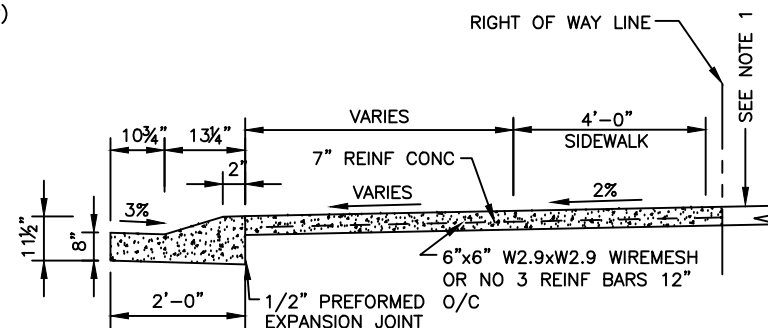
Approved: H:\3767\Final Volume 4\signature.bmp

Chief, Bureau of Engineering

RESIDENTIAL DRIVEWAY ENTRANCE  
7" Combination Curb and Gutter  
Sidewalk Abutting Curb

Detail

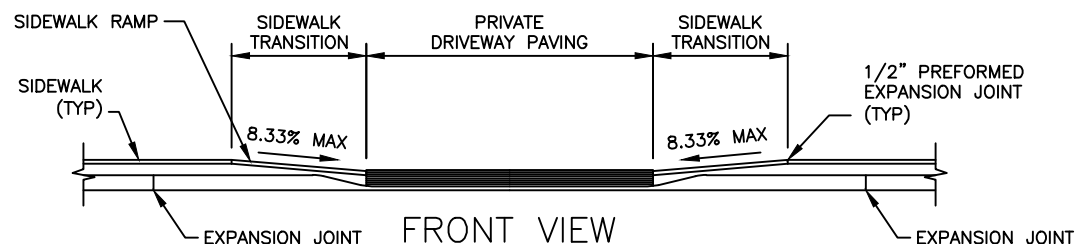
R-6.02



## SECTION

NOTES:

1. ALL RAMPS SHALL HAVE A TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP.
2. PRIVATE DRIVEWAY (IF CONC, 1/2" PREFORMED EXPANSION JOINT IS TO BE PROVIDED AT THE RIGHT OF WAY LINE.)
3. TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 15%.
4. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
4. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS RPROCESS; SEE VOLUME III.
4. THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY..



Revised

5/30/2017

Revised

5/7/2007

Approved

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Department of Public Works

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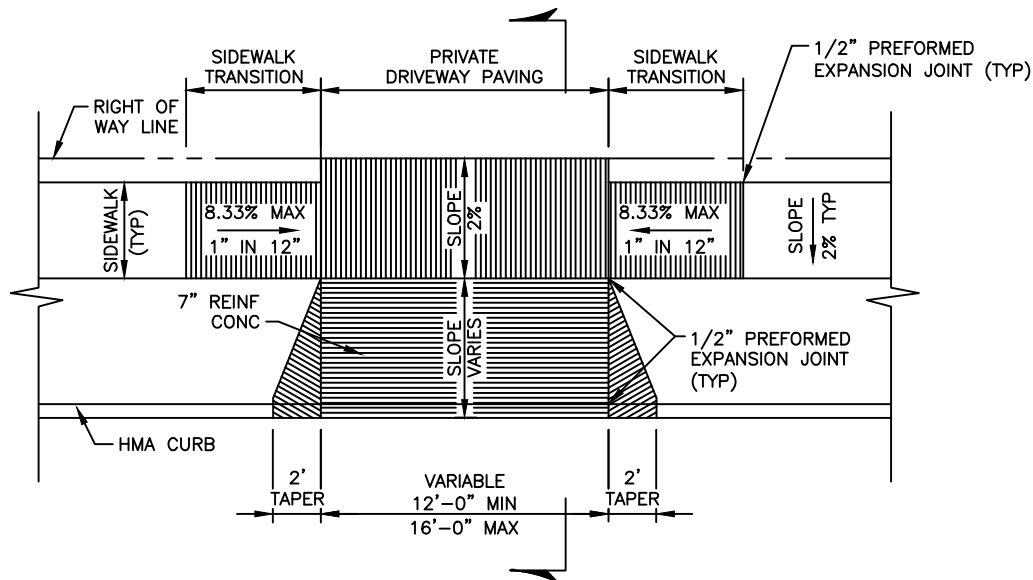
Chief, Bureau of Engineering

RESIDENTIAL DRIVEWAY ENTRANCE  
Modified Combination Curb and Gutter  
Sidewalk Setback from Curb

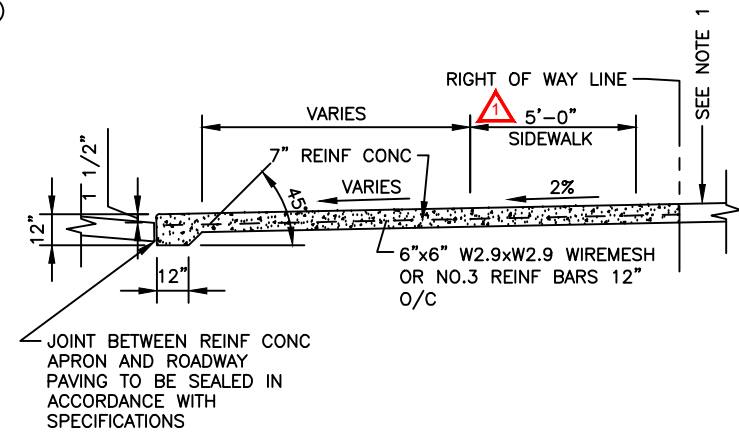
### Detail

R-6.03





PLAN



SECTION

### NOTES:

1. ALL RAMPS SHALL HAVE A TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP.
2. PRIVATE DRIVEWAY (IF CONC., 1/2" PREFORMED EXP. JOINT FILLER IS TO BE PROVIDED AT THE RIGHT OF WAY LINE.)
3. TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 15%.
4. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
5. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
6. THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY.



Revised

5/30/2017

Revised

5/7/2007

Approved

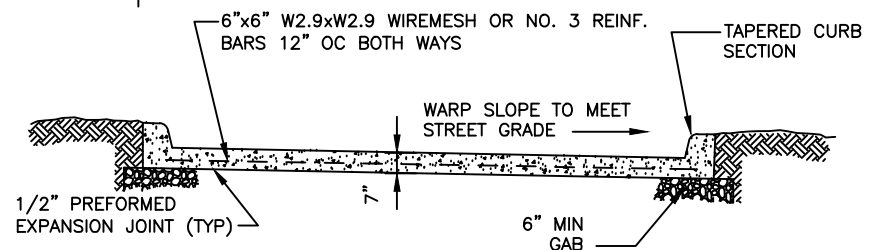
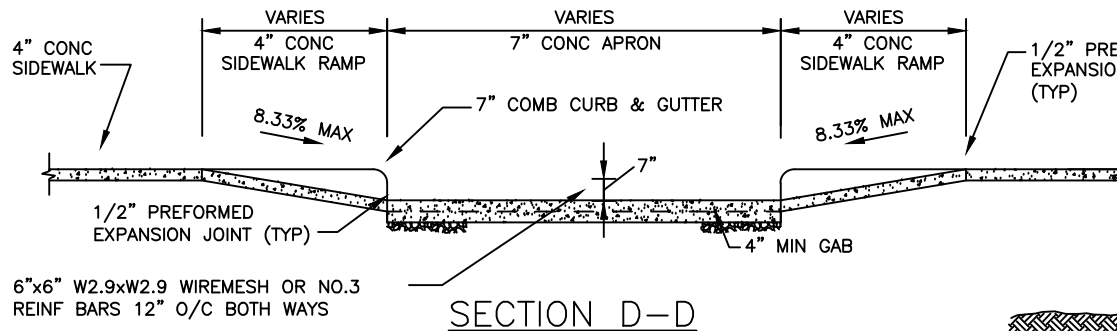
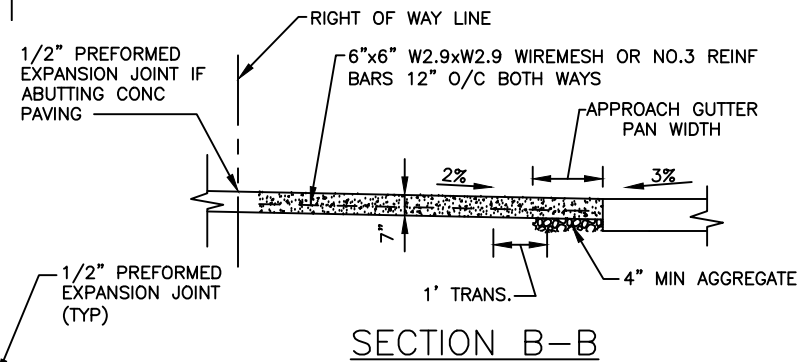
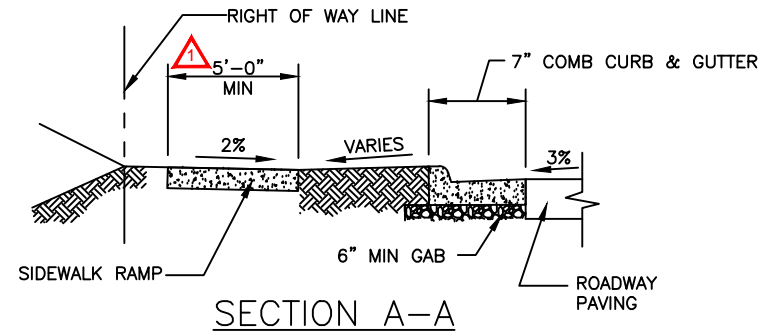
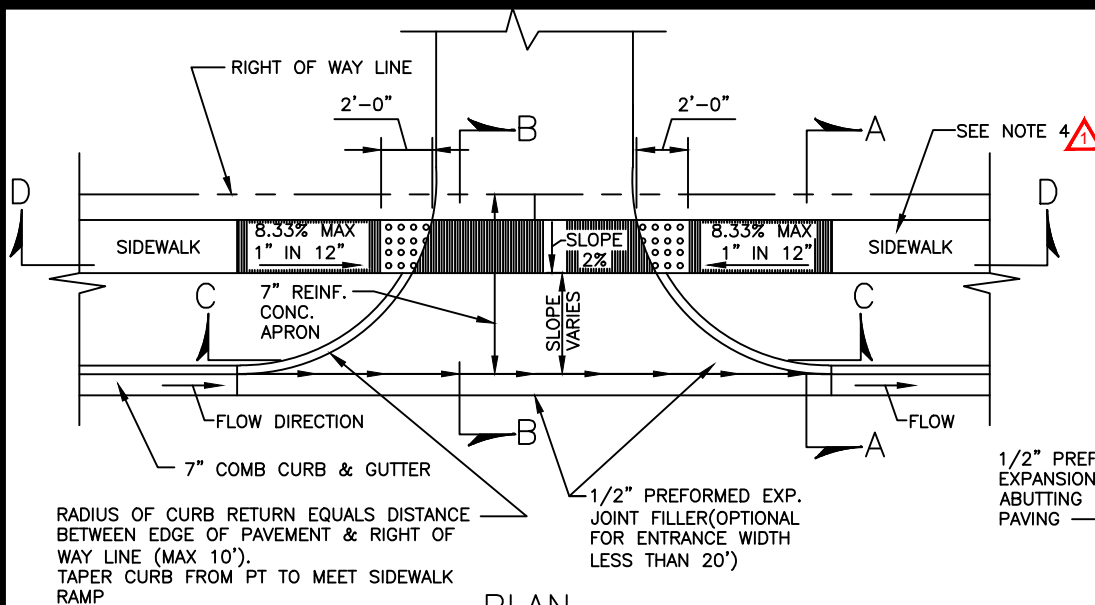
Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

RESIDENTIAL DRIVEWAY ENTRANCE  
Hot Mix Asphalt Curb  
Sidewalk Setback from Curb

Detail

R-6.04



#### NOTES:

- ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.
- GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
- SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
- THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY.

Howard County, Maryland  
Department of Public Works

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Chief, Bureau of Engineering

COMMERICAL-INDUSTRIAL-APARTMENT  
Entrance Concrete Apron

Detail  
R-6.07

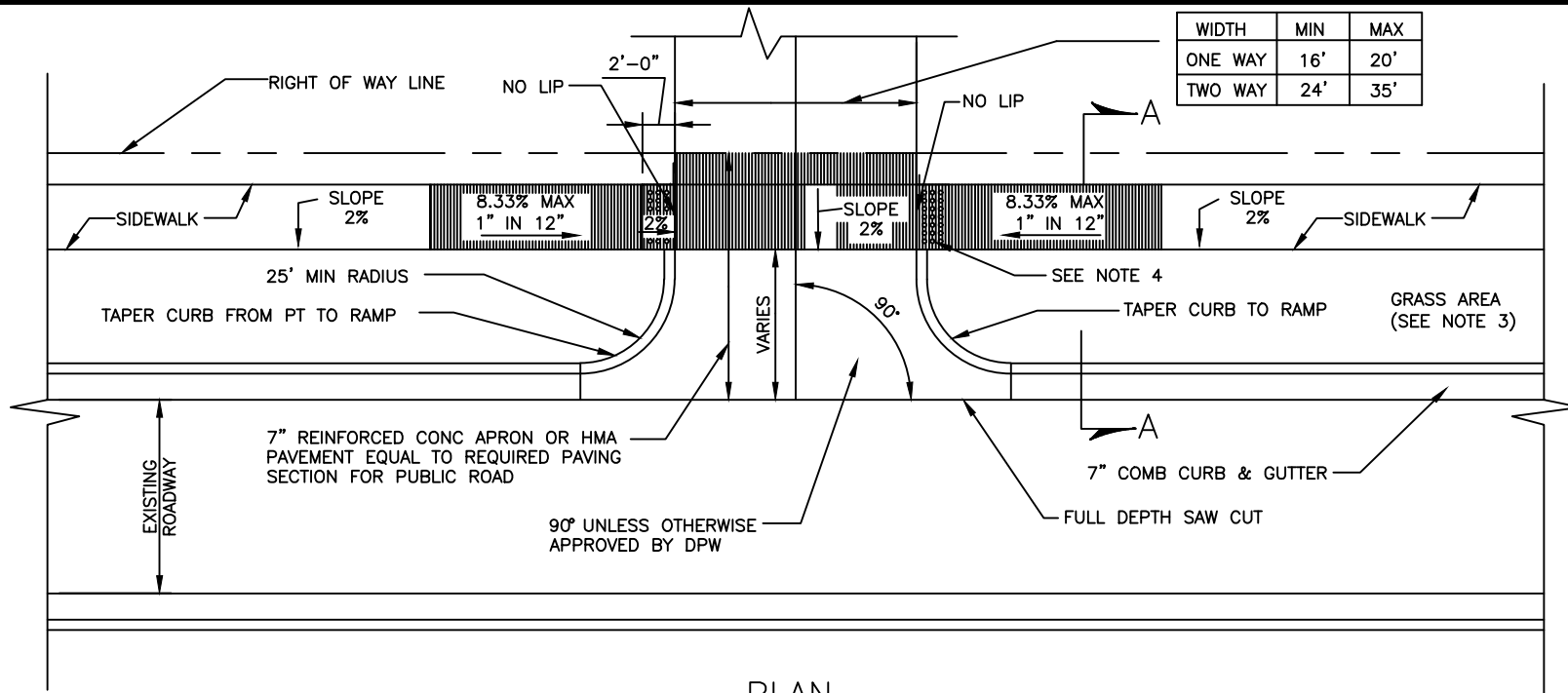
Revised

5/30/2017

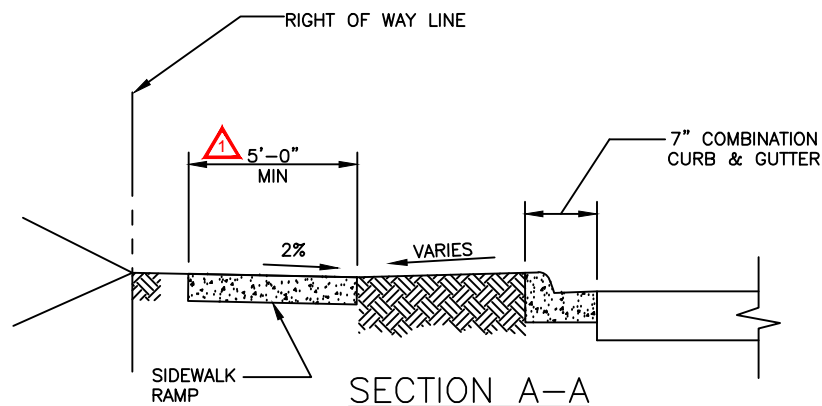
Revised

5/7/2007

Approved



PLAN



SECTION A-A

NOTES:

1. ENTRANCE TO BE USED ONLY IF AUXILIARY LANES ARE NOT REQUIRED IN ACCORDANCE WITH DESIGN MANUAL VOL. III SECTION 2.5.B.6 AND SECTION 2.5.G.
2. WHEN PROPOSED ENTRANCE IS CONSTRUCTED ON AN EXISTING STREET WITH COMBINATION CURB OR CURB & GUTTER, THE CURB OR CURB & GUTTER SHALL BE REMOVED TO THE FIRST EXISTING JOINT ON EITHER SIDE OF THE PROPOSED ENTRANCE AND REPLACED BY NEW CONSTRUCTION.
3. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
4. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE CURB RAMP.
5. SIDEWALK LESS THAN 5'-0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
6. THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY.



Revised  
5/30/2017  
Revised  
5/7/2007  
Approved

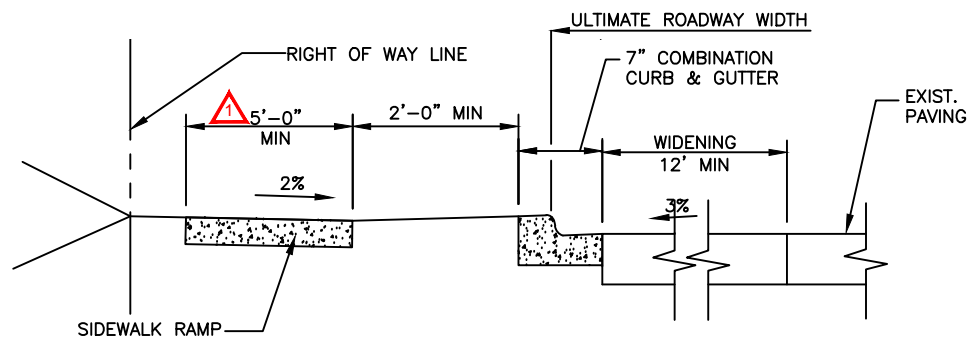
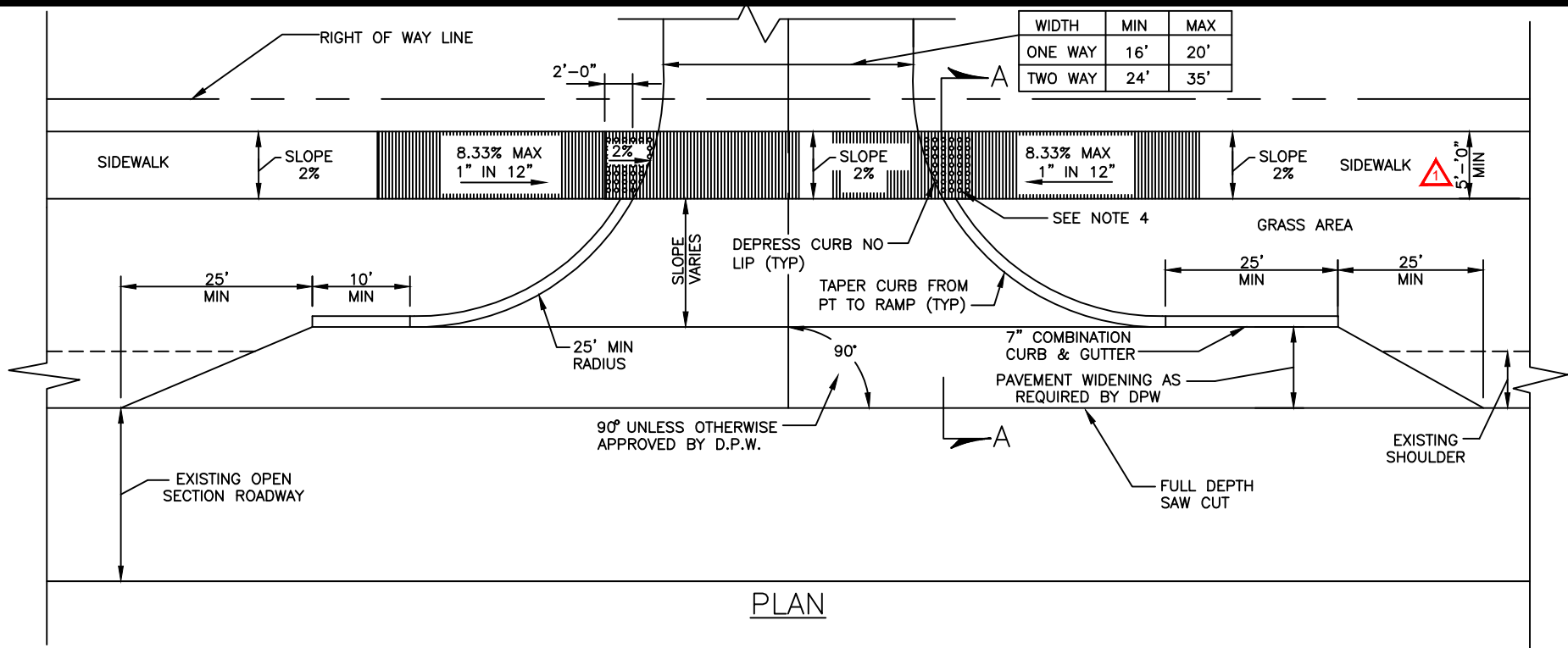
Howard County, Maryland  
Department of Public Works

Approved:                       
Chief, Bureau of Engineering

COMMERCIAL-INDUSTRIAL-APARTMENT  
Entrance on Closed Section Roadway  
( $<200$  V.P.H.)

Detail

R-6.09



### NOTES:

1. ENTRANCE TO BE USED ONLY IF AUXILIARY LANES ARE NOT REQUIRED IN ACCORDANCE WITH DESIGN MANUAL VOL III SECTION 2.4.B.6 AND SECTION 2.5.G.
2. PAVING SECTION FOR ENTRANCE WITHIN THE PUBLIC RIGHT OF WAY WILL BE AS REQUIRED FOR PUBLIC ROAD.
3. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
4. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE RAMP.
5. SIDEWALK LESS THAN 5'0" REQUIRES APPROVAL THROUGH THE EXCEPTIONS PROCESS; SEE VOLUME III.
6. THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY.



Revised  
5/30/2017  
Revised  
5/7/2007  
Approved

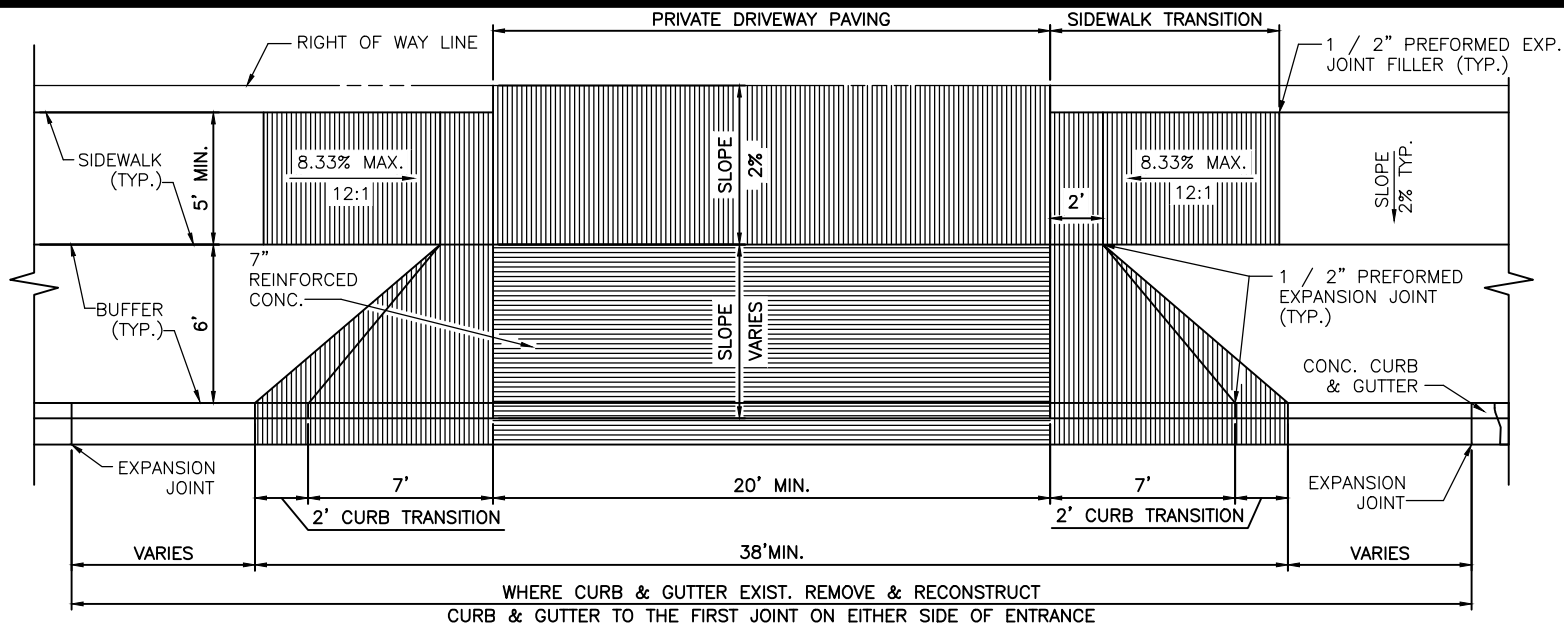
Howard County, Maryland  
Department of Public Works

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Chief, Bureau of Engineering

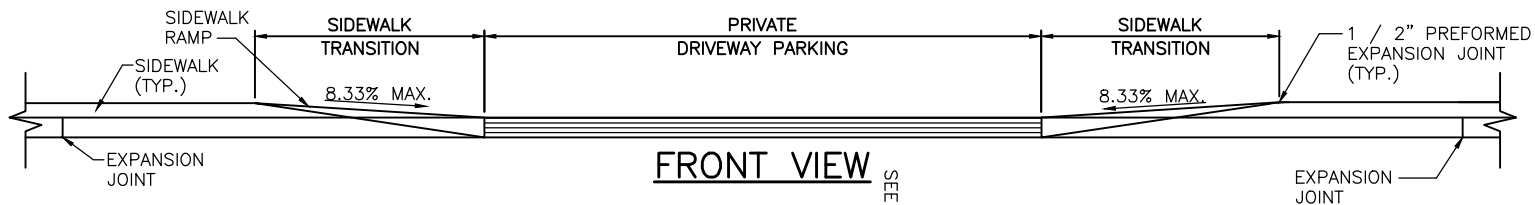
COMMERCIAL-INDUSTRIAL-APARTMENT  
Entrance on Open Section Roadway  
(<200 V.P.H.)

Detail

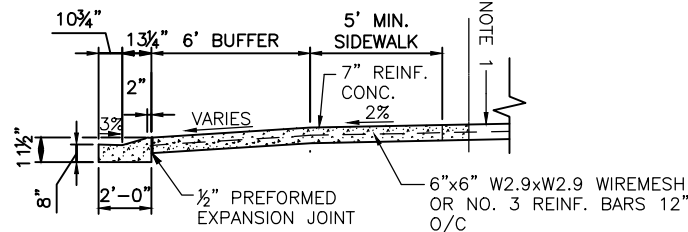
R-6.10



### PLAN



### FRONT VIEW



### SECTION

### NOTES:

1. ALL RAMPs SHALL HAVE A TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP.
2. PRIVATE DRIVEWAY (IF CONC. 1/2" PREFORMED EXPANSION JOINT IS TO BE PROVIDED AT THE RIGHT OF WAY LINE.)
3. TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 15%.
4. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
5. THE WIDTH OF THE ADJACENT SIDEWALK, SHARED USE PATH, AND/OR SEPARATED BIKEWAY SHALL BE CONTINUED ACROSS THE DRIVEWAY.

Revised

Revised

X/X/XXXX  
Approved

Howard County, Maryland  
Department of Public Works

Approved: \_\_\_\_\_  
Chief, Bureau of Engineering

RESIDENTIAL DRIVEWAY ENTRANCE  
24' Wide Neighborhood Street  
Driveway with Flared Apron

Detail

R-6.11